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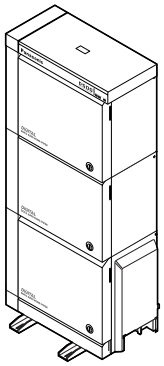
KX-TD500



Digital Super Hybrid System
Features Guide

Panasonic KX-TD500, KXTD500, KX TD500, TD500

Please read this manual before connecting the Digital Super Hybrid System and save this manual for future reference.
Thank you for purchasing the Panasonic Model KX-TD500, Digital Super Hybrid System.

Introduction

About this Features Guide

This Features Guide is designed to serve as an overall features reference for the Panasonic Digital Super Hybrid System, KX-TD500.
It explains what the KX-TD500 System can do, and how to obtain the most out of its many features and capabilities.

Section 1, General Features
Provides details about the general features.

Section 2, ISDN Features
Provides details about the features required to use Public Switched Telephone Network ISDN services.

Section 3, TIE Line Features
Provides details about the features required to use TIE line services.

Section 4, Tones / Ring Tones
Provides the list of tones and ring tones.

Section 5, Index
Provides the feature titles, important words and phrases to help you access the required information easily.

Note

- Throughout this manual the term "he" or "she," "his" or "her" may be used.
  In order to improve readability rather than continually use he/she we have only used one of these terms. The term "he" or "she" should be taken as being interchangeable.

Terms used in this Features Guide

Installation Manual References
The required installation instruction titles described in the *Installation Manual* are noted for your reference.

Programming Guide References
The related and required programming titles described in the *Programming Guide* are noted for your reference.
System Programming should be done with a PC.

Features Guide References
The related feature titles described in this *Features Guide* are noted for your reference.

User Manual References
The operation(s) required to implement the feature described in the *User Manual* is (are) noted for your reference.

About the other manuals

Along with this Features Guide, the following manuals are available to help you install, program, and use the KX-TD500 System:

Installation Manual
Provides instructions for installing the hardware and system maintenance.

Programming Guide
Provides step-by-step instructions for performing System Programming using the Maintenance Console software for a PC.

User Manual
Designed for users of Digital Super Hybrid System, KX-TD500.
The focus is Digital Proprietary Telephones (DPTs), Digital DSS Consoles, Single Line Telephones (SLTs) and their features.

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Section 1

General Features

1.1 System Expansion

EXtra Device Port (XDP)

Description

A DPT and an SLT can be connected to the same extension port but have different extension numbers so that they can act as completely different extensions.

Conditions

- **Hardware Requirements**
  DHLC card (KX-TD50170) is required to utilize this feature.
- XDP requires previous programming of the extension port. Enable XDP mode for the desired port by System Programming.
- If one or more DHLC cards are installed after booting up the System with default values, DN assignment should be done before performing XDP assignment.

Installation Manual References

- 2.4.13 Extra Device Port (XDP) Connection

Programming Guide References

- 1.4 Extension Port Assignment
  - Parallel / XDP (DHLC card)

Features Guide References

1.3 System Features

- Paralleled Telephone

User Manual References

Not applicable.

1.2 System Administration

System Programming and Diagnosis with Personal Computer

Description

The KX-TD500 system can be programmed and administered using a Personal Computer (PC). The Programming Guide is required to perform PC Programming. There are two programming methods:

On-Site Programming
By connecting a PC to your system, System Programming and maintenance can be performed locally.

There are two ways available to perform the above:

(Method 1.) Using the Serial Interface (RS-232C) port
Connect the PC to the Serial Interface (RS-232C) port provided. The Basic Shelf is provided with RS-232C Ports. RS-232C Port 1 (PROG) is used for System Programming, diagnostics and external system database storage (Save / Load) functions, and Port 2 (SMDR) for Station Message Detail Recording (SMDR) only.

(Method 2.) Using an internal modem
Install the optional Remote Card — RMT card (KX-T96196) or ERMT card (KX-TD50197). Connect an extension port to the modem. Assign the FDN of the modem by System Programming. Dial this number from the PC.

Remote Programming
You can perform System Programming and maintenance from a remote site using a PC. Install the Remote Card and assign the Remote FDN by System Programming.
Starting system administration from a remote location can be done using one of the following ways:

a) [Call Transfer]
- Call an extension (probably the Operator) from a remote location and request a transfer to the modem.

b) [DISA]
- Dial the "FDN of the modem" using the DISA feature.

c) [DIL 1:1]
- Assign the "FDN of the modem" as the destination of the DIL 1:1 feature.

d) [DID / DID (ISDN)]
- Program DID / DID (ISDN) feature so that the incoming telephone number is converted to the "FDN of the modem."

e) [TIE Lines]
- Dial the "FDN of the modem."
- Dial the TIE Line access code, the PBX Code and the "FDN of the modem."

(Method 3.) Using an external modem
Please refer to "External Modem Control" of Section "1.3 System Features" and Section "4.3.36 External Modem Control" in the User Manual.

For more information and programming instructions, please refer to the Installation Manual and the Programming Guide.

Warning to the Customer regarding the System Password

a) Please maintain the secrecy of the password.

Because a person who knows the password can easily take over the control of any PBX system in the market and he may proceed to commit toll fraud.

b) Please select the dealer whom you can trust for the installation and maintenance.

c) Please change the password periodically.

d) We strongly recommend that you set the system password to 7 digits for maximum protection against "hackers."

Warning to the Dealer regarding the System Password

a) Please thoroughly inform the importance of the password and the dangers involved to the customer.

b) Please maintain the secrecy of the password.

Because a person who knows the password can easily take over the control of any PBX system in the market and he may proceed to commit toll fraud.

c) Please change the password periodically.

d) We strongly recommend that you set the system password to 7 digits for maximum protection against "hackers."

e) You have to take the following measures to find the system password, when you forget the password. Therefore, please never forget the password.

- If you have the backup system data, you can find the password by loading the backup system data to your PC and check the Password with programming screen.
- If you don't have the backup system data, you have to program again or contact your Panasonic dealers.

Conditions

- **One Time One Access**
  Only one device is allowed to perform System Programming at a time.
- **System Password**
  To access system administration, a valid password must be entered. The password is factory-programmed and can be changed.
- System administration can be performed in on-line mode except for the procedures of the diagnosis.

Installation Manual References

- 2.6.3 RMT Card (KX-T96196)
- 2.6.4 ERMT Card (KX-TD50197)

Programming Guide References

- 10.2 External Modem 1/2
- 10.3 External Modem 2/2
- 10.6 System Parameters
  - [Password] System Programming – Protection Level 1
  - [Password] System Programming – Protection Level 2
  - [Password] System Programming – Protection Level 3
  - [Password] System Programming – Protection Level 4
  - [Serial Interface Port] PROG – Parity
  - [Serial Interface Port] PROG – NL Code
  - [Serial Interface Port] PROG – Word Length
  - [Serial Interface Port] PROG – Stop Bit
  - [Serial Interface Port] PROG – Baud Rate

Features Guide References

1.3 System Features

- External Modem Control

User Manual References

Not applicable.

Traffic Measurement

Description

Provides current traffic information about following items individually.
You can collect and display the traffic information using the Maintenance Console PC.

1. Station
2. Trunk Group
3. Operator
4. UCD
5. OGM
6. AGC
7. Incoming Group

Please refer to Section "4.3.1 Traffic Information" in the Installation Manual.

Conditions

None

Installation Manual References

- 4.3 Traffic Information

Programming Guide References

System Programming is not required.

Features Guide References

None

User Manual References

Not applicable.

User Programming with Proprietary Telephone

Description

Allows a PT user to assign or change the following System Programming items at his own PT.

Access No.	Title
000	Date and Time Set
001	System Speed Dialing Number Set
002	System Speed Dialing Name Set
004	Extension Name Set
005	Flexible CO Button Assignment
006	Caller ID Dial Set
007	Caller ID Name Set
008	Absent Messages Set
009	Quick Dial Number Set
010	DISA / TIE User Code Set

Conditions

- User Programming Password is required to perform User Programming.

Programming Guide References

- 10.6 System Parameters
  - [Password] User Programming – PT

Features Guide References

None

User Manual References

- 3 User Programming

1.3 System Features

Account Code Entry

Description

An Account Code (max. 10 digits) is used to identify incoming and outgoing CO calls for accounting and billing purposes.

[For Outgoing CO Calls]

One of the following three Account Code Entry modes is selected for each extension on a Class of Service basis:

Verified-All Calls mode:

An extension user must always enter a pre-assigned account code when making CO calls.

Verified-Toll Restriction Override mode:

An extension user can enter a pre-assigned account code to override toll restriction.

Option mode:

An extension user can enter any account code if needed.

[For Incoming CO Calls]

Account code entry is optional.

Conditions

- Up to 1000 account codes per system can be assigned by System Programming.
  These account codes are required when extension users in "Verified—All Calls mode" or "Verified—Toll Restriction Override mode" make outgoing CO calls.
- **Tenant Service**
  If Tenant Service is employed, the affiliation of each account code is determined by System Programming.
- **SMDR**
  The account code is appended to the Station Message Detail Recording (SMDR) call record.

  When two or more different account codes are entered during a single call, it is possible to select whether SMDR prints out the first entered account code or the last entered account code by System Programming <Section 10.4 SMDR, "Print out Account Code" in the Programming Guide>.
- **Memory Dialing**
  An account code can be stored into Memory Dialing (System / Station Speed Dialing; One-Touch Dialing).
- **Account code entry after CPC detection**
  Should be done within 15 seconds. Otherwise, call record is appended to SMDR call record and entry becomes impossible afterwards.

- **TRS Level**
  Each account code is appended with unique TRS Level for "Toll Restriction Override by Account Code Entry" feature.
- **Emergency numbers**
  Regardless of the Account Code Entry mode setting, emergency numbers can be dialed out without entering an account code.
- **Account button**
  The Account button can be used instead of dialing the feature number. It can be assigned to a flexible (CO, DSS, PF) button by Station, User or System Programming.
- The account code used for making a CO call is memorized in the following auto dial memories: Last Number Redial, Saved Number Redial, Call Log, Outgoing
- SLT users cannot enter an account code during a call or while hearing a reorder tone.

Programming Guide References

- 2.3 Numbering Plan
  - Account Code
- 2.4 Class of Service (COS)
  - Account Code Mode
- 4.3 Extension Line
  - CO Key
  - PF Key
- 4.4 DSS Console
  - DSS Key
  - PF Key
- 5.6 Account Code
  - Tenant No.
  - Entry No.
  - Code
  - TRS Level
- 10.4 SMDR
  - Print out Account Code

Features Guide References

1.3 System Features
- Station Message Detail Recording (SMDR)

1.6 Originating Features
- Toll Restriction Override by Account Code Entry

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.2 Account Code Entry
- 4.3.76 Toll Restriction Override by Account Code Entry

Automatic Calling Cancel

Description

If this feature is enabled, the system automatically disconnects the CO line in use when the CO call is not answered in a specified period of time.

Conditions

- This feature applies to the following trunks:
  T1 (DID, TIE), DID, ISDN (PRI23, BRI)

Programming Guide References

- 4.2 Trunk Line
  - Answer Wait Timer

Features Guide References

None

User Manual References

Not applicable.

Automatic Configuration[*1]

Description

This is one of the DPT Integration features.
If DPT lntegration is activated, the system transmits the extension number configuration information to the Voice Processing System (VPS). The VPS then automatically creates the mailbox for each extension based on this information.

Conditions

- Correct Mailbox No. length must be selected in Panasonic Voice Mail System Reset / Clear Menu to create proper Mailbox No. based on three-digit or four-digit numbering plan.
- Automatic Configuration is available with one of the following KX-TVS series VPSs: KX-TVS75, KX-TVS100, KX-TVS200, KX-TVS80 / 110 / 200-1 / 200-2, KX-TVS300.
- When "Automatic Configuration" is executed, the VPS will automatically create 64 (KX-TVS75 / KX-TVS100) or 1024 (KX-TVS200 / KX-TVS80 / 110 / 200-1 / 200-2 / KX-TVS300) mailboxes.
- **"PBX Type" selection of the KX-TVS series VPS**
  When integrating the KX-TD500 System with one of the KX-TVS series VPSs, please select 'TD500' in "PBX Type" menu of the VPS. However, if 'TD500' is not listed in the menu, please select "TD1232" instead.
- Automatic Configuration is available when the VPS is connected to a DLC or DHLC card whose LPR Version is 1 or later (except TVS300) and whose LPR Version is 2 or later (TVS300 only). LPR version can be confirmed by System Programming <Section 1.2.4 Card Properties (DHLC/ESLC/DLC), "LPR Version" in the Programming Guide>.
- It is programmable whether to create the mailboxes for extensions within only the tenant which has the VPS ports (Jack No.1) or for extensions within all the tenants by System Programming <Section 2.8 System Option, "VPS Auto Configuration Mode" in the Programming Guide>.

Programming Guide References

- 1.2 Slot Assignment
  - LPR Version
- 2.8 System Option
  - VPS Auto Configuration Mode
- 5.10 VPS Integration

Features Guide References

1.3 System Features

- Integration, DPT

[*1] Available when the Digital Super Hybrid System is connected to a Digital Proprietary Telephone capable Panasonic Voice Processing System (one that supports Digital Proprietary Telephone [DPT] integration; e.g., KX-TVS100).

User Manual References

Not applicable.

Background Music (BGM)—External

Description

Background Music (BGM) can be broadcast throughout the office via the external pagers. The BGM through External Pagers can be turned on / off by the Manager and the Operators.

Conditions

- **Hardware Requirements**
  It is required to connect a user-supplied external pager. Up to two pagers and up to two external music sources can be installed in the system.
- To make BGM - External possible, you must enable BGM and select a music source by System Programming <Section "4.6 External Paging " in the Programming Guide>.
- **External Pager Priority**
  Priority of access to external pager is: (1) TAFAS; (2) Paging; (3) BGM. Higher priorities will override the BGM.

Installation Manual References

- 2.8.1 External Pager (Paging Equipment)
- 2.8.2 External Music Source

Programming Guide References

- 2.2 Tenant
  - BGM Source
- 2.3 Numbering Plan
  - External BGM On / Off
- 4.6 External Paging
  - BGM
  - BGM Source

Features Guide References

1.15 Proprietary Telephone Features

- Background Music (BGM)

User Manual References

- 4.4.2 Background Music (BGM) — External

Calling Party Control (CPC) Signal Detection

Description

The Calling Party Control (CPC) Signal is an on-hook indication (disconnect signal) sent from the Central Office when the telephone is hung up at the other end. To maintain efficient utilization of CO lines, the system monitors their status and when CPC Signal is detected from a line, the system disconnects the line and alerts the extension with a reorder tone.

Conditions

- This feature is enabled or disabled on incoming and outgoing CO calls separately by System Programming.
- **CPC Signal Detection on outgoing CO calls**
  Generally CPC Signal Detection works on incoming CO calls, and does not work on outgoing CO calls (except once they are placed on Call Hold, Exclusive Call Hold or Consultation Hold). In this case, if the extension user remains off-hook after the completion of an outgoing CO call, the system does not release all the switches used to establish the connection. The connected CO line will continue to be in use. To prevent this, it is programmable to make CPC Signal Detection work on outgoing CO calls.
  Note: Some Central Offices (CO) may send CPC-like signals during the dialing sequence and an attempt to make a call may be terminated. If your CO sends such signals, it is recommended to make CPC Signal Detection work on outgoing CO calls.
- **Digits Restriction in CO Talk Mode**
  If your Central Office does not send CPC-like signals, it is effective to limit the number of dialing digits permitted during a CO call by System Programming <Section 2.4 Class of Service (COS), "Digits Restriction in CO Talk Mode" in the Programming Guide> to prevent unauthorized calls.
- If a CPC Signal is detected during a Conference call, the line is disconnected and the remaining two parties resume the call.
- If a CPC Signal is detected during a DISA call, the line is disconnected.

Programming Guide References

- 2.4 Class of Service (COS)
  - Digits Restriction in CO Talk Mode
- 4.2 Trunk Line
  - [CPC Signal] OUT Detection
  - [CPC Signal] OUT Detection—Detection Time
  - [CPC Signal] IN Detection
  - [CPC Signal] IN Detection—Detection Time

Features Guide References

None

User Manual References

Not applicable.

Class of Service (COS)

Description

Used to define a set of services available to the extension user. Up to 96 different types of Class of Service can be established by System Programming. A Class of Service number is assigned to each extension by System Programming.
The programmable items are shown below:

Programmable items	Selection
Account Code Mode	Optional / Verify-Toll / Verify-All
Automatic Hold	Enable / Disable
Call Forwarding Follow Me	Enable / Disable
Call Forwarding to CO / TIE	Enable / Disable
Call from TRS (Toll Restriction) Level 7 Extension	Enable / Disable
Digits Restriction in CO Talk Mode	Unrestricted / 1-15 digits
DND (Do Not Disturb) Override	Enable / Disable
Executive Busy Override	Enable / Disable
Executive Busy Override Deny	Enable / Disable
Incoming Group FWD	Disable / Own Group(s) / Any Group
Off-Hook Call Announcement (OHCA)	Enable / Disable
Released Link Operation	Enable / Disable
SDN COS	Owner Extension / PDN
Secret Busy Override	Enable / Disable
Switching Day / Night Mode	Enable / Disable
Time Limit of Outside Calls	Yes / No
Transfer to CO	Enable / Disable
Transfer to TIE	Enable / Disable
Transferring CO dial tone (exempted from TRS)	Enable / Disable
TRS (Toll Restriction) Level - Day / Night	1-8
Trunk Group Setting, Day / Night	Trunk Group 01-48

Conditions

- **Walking COS**
  The extension user can make a toll call at other lower level COS extensions (toll / outward restricted) by employing his own higher level COS temporarily.
- **Switching COS**
  Two different levels of COS, Primary COS and Secondary COS, are assigned to all extensions. However, either one of them is valid at a time. The Manager and the Operators can change the COS level of any extension including their own.

Programming Guide References

- 2.4 Class of Service (COS)
- 4.3 Extension Line
  - [COS No.] Primary
  - [COS No.] Secondary
- 4.7 ISDN Extension Line
  - [COS No.] Primary
  - [COS No.] Secondary

Features Guide References

1.6 Originating Features
- Walking COS

User Manual References

- 4.3.84 Walking COS
- 4.4.10 Switching COS

Dial Type Selection

Description

Used to select the desired dialing mode for each CO line regardless of originating call extension (rotary or tone).
There are two dialing modes available:

DTMF (Dual Tone Multi-Frequency) Mode
The dialing signal from an extension, either tone or rotary, is converted to tone dialing. DTMF signals are transmitted to the CO line.

Pulse Dial (Rotary) Mode
The dialing signal from an extension, either tone or rotary, is converted to rotary dialing. Rotary pulses are transmitted to the CO line.

Conditions

- **Pulse to Tone Conversion**
  The extension user can convert the pre-assigned rotary dialing mode to DTMF mode temporarily. DTMF mode cannot be changed to rotary.
- **DISA**
  Either DTMF or rotary dialing can be assigned for the DISA (Direct Inward System Access) outgoing line. With DISA, Pulse to Tone Conversion is not possible.
- If you specify "Pulse" as "Dial Type" of a trunk line, select an appropriate pulse speed, pulse break ratio, and inter-digit pause for the line, if necessary. If you specify "DTMF," select an appropriate DTMF duration for the line in "Card Properties" screen, if necessary. Please refer to "Card Type" of Section "1.2 Slot Assignment" in the Programming Guide for further information on "Card Properties."

Programming Guide References

- 1.2 Slot Assignment
- 4.2 Trunk Line
  - Dial Type

Features Guide References

1.12 Conversation Features
- End-to-End DTMF Signaling (Tone Through)
- Pulse to Tone Conversion

User Manual References

- 4.3.64 Pulse to Tone Conversion

DIL 1:N Group

Description

Used to group extensions or Extension Groups or both so that an incoming CO call comes in on multiple extensions simultaneously.
DIL 1:N is one of the five different types of Incoming Group.
Up to 96 DIL (Direct In Lines) 1:N Groups can be set up in the system.
Each group can include up to 72 extensions or Extension Groups or both.

Conditions

- A single extension can be assigned to up to eight different DIL 1:N Groups at a time.
- **Delayed Ringing**
  When an outside call directed to a DIL 1:N Group comes in, all extensions in the group ring immediately by default.
  This setting can be changed to delayed ringing or no ring on each DIL 1:N Group member (extension or Extension Group) basis.

Programming Guide References

- 3.5 Incoming Group
  - Group Type
  - [Destinations] DN
  - [Destinations] Ringing Type
- 4.2 Trunk Line
  - Incoming Type
  - Destination—Day/Night/Lunch/Break

Features Guide References

1.13 Audible Tone Features
- Ringing, Delayed

User Manual References

Not applicable.

Door Opener

Description

Allows the extension users to unlock the door for a visitor from their extensions. The door can be unlocked by extension users assigned as the destination of doorphone calls anytime by dialing the appropriate feature number. However, during a doorphone call, any extension user can open the door from their extensions by dialing "5" to let the visitor in.

Conditions

- **Hardware Requirements**
  It is necessary to install a DPH Card (KX-T96161) and a user-supplied door opener on each door to be opened. Up to eight door openers can be installed in the system.

Installation Manual References

- 2.7.3 DPH Card (KX-T96161)

Programming Guide References

- 2.3 Numbering Plan
  - Door Open
- 2.5 System Timer
  - Door Opener Time
- 4.5 Doorphone
  - Destination – Day / Night

Features Guide References

1.12 Conversation Features

- Doorphone Call

User Manual References

- 4.3.29 Doorphone Call

Extension Group

Description

To support efficient utilization of extensions, they can be grouped together as an Extension Group. Any extension in the Extension Group can pick up a call ringing at another extension within the same Extension Group **(Call Pickup - Group)**.
Extension Group is used to direct incoming calls (both extension and outside) to a group of answering extensions associated with the type of incoming calls.
Up to 128 Extension Groups can be created in the system.

The following seven different types of Extension Group can be created:

Group Type	Description
Terminate	If the called extension is busy, Station Hunting redirects the incoming call to an idle extension within the same Extension Group. The extensions are searched in the order of the extension port physical numbers (Installing additional cards may change the order.) until reaching the extension with the highest physical number in the group **(Station Hunting Group - Terminate)**.
Circular	If the called extension is busy, Station Hunting redirects the incoming call to an idle extension within the same Extension Group. The extensions are searched in the order (from lower to higher) of the extension port physical numbers (Installing additional cards may change the order.) until an idle one is found **(Station Hunting Group - Circular)**.
Ring	All the extensions in the Ring Group ring simultaneously.
Operator	Within an Operator Group, an operator-seeking call (extension / outside) may come in on a single operator (Single) or all operators in the group simultaneously (Multi) depending on System Programming.
VM (Voice Mail)	All the VM ports are searched until an idle one is found to permit VM Service.
AA (Automated Attendant)	All the AA ports are searched until an idle one is found to permit AA Service.
UCD (Uniform Call Distribution)	Successive calls go to a different extension each time a call is received. Extensions are hunted in a circular way.

Conditions

- **Log-in, Log-out**
  Members of an Extension Group (except Group Type: None) can leave the group temporarily when they are away from their desks, to prevent calls being sent to their extension (Log-out). They can return to the group when they are ready to answer a call (Log-in).
- A single extension user cannot belong to two or more different Extension Groups at a time.

Programming Guide References

- 1.4 Extension Port Assignment
  - Group No.
- 2.3 Numbering Plan
  - Login / Logout
- 3.3 Extension Group
  - Group No.
  - FDN
  - Tenant No.
  - [Overflow Setting] Destination – Day / Night
  - [Overflow Setting] Timer
  - Group Type
  - FWD / DND Mode
  - Extension Call Hunting
  - Calls to Empty Group
  - [UCD Setting] Time Table No.
  - [UCD Setting] FWD No Answer
  - [UCD Setting] Auto LOGOUT Mode
  - [UCD Setting] Supervisor Extension
  - [UCD Setting] LOGIN Monitor
  - [UCD Setting] UCD Call Waiting
  - [Operator Setting] Call Priority
  - [Operator Setting] Ringing Type
- 4.3 Extension Line
  - Group No.
- 4.7 ISDN Extension Line
  - Group No.

Features Guide References

1.3 System Features

- Floating Station
- Integration, Automated Attendant (AA) Service
- Integration, Voice Mail (VM) Service
- Operator Group

1.5 Attended Features

- Ring Group
- Uniform Call Distribution (UCD)

1.8 Ringing Features

- Log-In/Log-Out
- Station Hunting

1.9 Answering Features

- Call Pickup

User Manual References

Not applicable.

External Modem Control

Description

The system supports an external modem (Please refer to **Notes**) plugged into the RS-232C Port 1. The system communicates with the remote terminal at data rate of up to 19,200 bps and enables remote system maintenance through an external modem. A pre-assigned AT Command (see **Notes**) can be sent to an external modem automatically when it is plugged into the RS-232C Port 1. The extension user is also allowed to control the external modem by sending the pre-assigned AT Commands.

Conditions

- To connect an external modem to your system, perform the following procedures:

1. Connect the modem to the system with the Serial Interface (RS-232C) cable.

2. Connect the modem to an extension port which is assigned as the DIL 1:1 destination. Or connect the CO line directly to the modem.

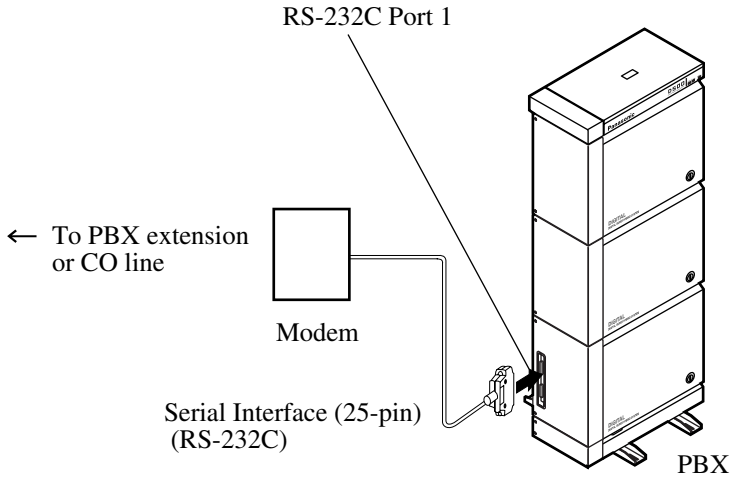
3. Set the power switch of the modem to "ON," then the modem will be initialized with the default values.

4. The following AT Commands settings may be required for the modem.

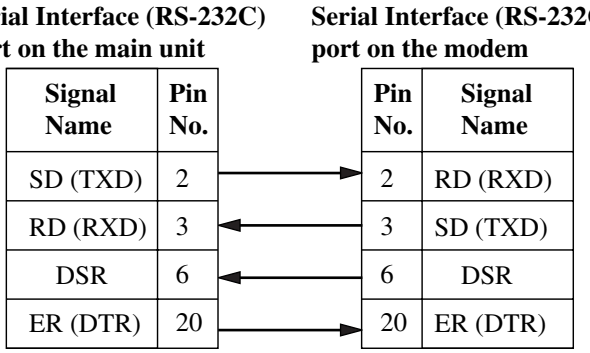
- The Data Terminal Ready (DTR) signal should be ignored.
- The Data Terminal Equipment (DTE) / Modem flow control should be turned off.
- The data compression should be disabled.
- Error Correction is not necessary.

Notes

- **Not all modems will be compatible. Please contact the Panasonic Bulletin Board System (BBS) at (201)271-3346 for a list of recommended modems.**
- **Please refer to the modem instructions as the AT Commands depend on the manufacturer of your model.**



- The connection chart for the external modem (25-pin) is as follows:



- An AT Command (for initialization, enabling Automatic Answer, etc.) can only be programmed by Serial Interface / remote programming software. *"AT&F0Q0E0V1S0=1X0&D0"* is stored as the default value.
- For more information about the AT Command, please refer to the modem instructions.

Programming Guide References

- 2.3 Numbering Plan
  - MODEM Control
- 10.2 External Modem 1/2
  - Manual Initialization Command (1- 5)
  - Automatic Initialization Command
- 10.3 External Modem 2/2
  - Connection Message (1-5)
  - Disconnection Message (1-5)
- 10.6 System Parameters

Features Guide References

1.2 System Administration

- System Programming and Diagnosis with Personal Computer

User Manual References

- 4.3.36 External Modem Control

Flexible Numbering

Description

The numbers used for the access codes of system features and the numbers used for extension numbers are not fixed. They can be set as required, provided there are no conflicts.

Feature numbers can be from **1 to 4 digits**, utilizing numbers "0 through 9" as well as "✳" and "#."

Extension numbers can be **3 to 4 digits** in length. Numbers "0 through 9" can be set as the leading 1 or 2 digits of the extension number. If 1 digit is assigned as the leading digit, extension numbers are 3-digit in length. If 2 digits are assigned as the leading digits, extension numbers are 4-digit in length.

Flexible Feature Numbers

Number	Feature	Default
01	1st Hundred Block Extension	10
02	2nd Hundred Block Extension	11
03	3rd Hundred Block Extension	12
04	4th Hundred Block Extension	13
05	5th Hundred Block Extension	14
06	6th Hundred Block Extension	20
07	7th Hundred Block Extension	21
08	8th Hundred Block Extension	22
09	9th Hundred Block Extension	23
10	10th Hundred Block Extension	24
11-16	11th through 16th Hundred Block Extension	Blank
17	Operator Call	0
18	Local CO Line Access / ARS	9
19	Trunk Group Access	8
20	Speed Dialing - System	✳
21	Speed Dialing - Station	3✳
22	Speed Dialing - Station Programming	30
23	Doorphone Call	31
24	External Paging	32
25	External Paging Answer / TAFAS Answer	42
26	Station Paging	33

Flexible Feature Numbers

Number	Feature	Default
27	Station Paging Answer	43
28	CO Call Pickup	4✳
29	Group Call Pickup	40
30	Directed Call Pickup	41
31	Hold	50
32	Hold Retrieve - Station	51
33	Hold Retrieve - Trunk	53
34	Redial	#
35	Call Park / Call Park Retrieve	52
36	Account Code	49
37	Door Open	55
38	External Feature Access	6
39	Station Program Clear	790
40	Message Waiting Set / Cancel / Call Back	70
41	OGM Playback / Record	36
42	Call FWD - Do Not Disturb Set / Cancel	710
43	Dial Call Pickup Deny Set / Cancel	720
44	Data Line Security Set / Cancel	730
45	Call Waiting Set / Cancel	731
46	Executive Busy Override Deny Set / Cancel	733
47	Pickup Dialing Program / Set / Cancel	74
48	Absent Message Set / Cancel	750
49	Timed Reminder Confirm / Set / Cancel	761
50	Station Lock Set / Cancel	762
51	Night Mode Set / Cancel	78
52	Parallel telephone mode	39
53	External BGM On / Off	35
54[*1]	Live Call Screening	799
55	Call Log Incoming, Overwrite Mode	56
56	Call Log Incoming, Log Lock	57
57	Timed Reminder, Remote	7✳

Flexible Feature Numbers

Number	Feature	Default
58	Login / Logout	45
59	Automatic Callback Busy Cancel	46
60	Walking COS	47
61	MODEM Control	791
62	Reserved	–
63-70	Quick dial 1-8	Blank
71	Reserved	–
72	Remote DND	722
73	Remote FWD Cancel - Once	723
74	Trunk Route Control	724
75	UCD Monitor Mode	725
76	TIE Line Access	77
77-92	Other PBX 01-16	Blank
93	Paging Deny Set / Cancel	721
94	Trunk Busy-out	726
95	Walking Station	727
96	CLIP	711
97	CLIR	59
98	Reserved	–
99	Dial Information (CTI)	Blank
100	COS Primary	792
101	COS Secondary	793
102	Reserved	–
103	Group Login / Logout	48
104	Group FWD	714
105-120	Reserved	–

*1 Available when the Digital Super Hybrid System is connected to a Digital Proprietary Telephone capable Panasonic Voice Processing System (one that supports Digital Proprietary Telephone [DPT] integration; e.g., KX-TVS100).

In addition to the flexible feature numbers, fixed feature numbers are provided on the next page.

Fixed Feature Numbers

Feature	Type-1 (Default)	Type-2
While a busy tone is heard:		
Automatic Callback Busy	6	6
Busy Station Signaling (BSS) / Off-Hook Call Announcement (OHCA) / Whisper OHCA	1	2
Executive Busy Override	2	3
While a Do Not Disturb tone is heard:		
Do Not Disturb Override	1	2
While calling or talking:		
Account Code Delimiter	# / 99	# / 99
Alternate Calling - Ring / Voice	⁎	⁎
Conference	3	3
Door Open	5	5
Pulse to Tone Conversion	⁎ #	⁎ #
When the extension is on-hook:		
Background Music (BGM) on / off	1	HOLD / TRANSFER
Day / Night mode display	#	#
Time display / Self-Extension Number display switching	⁎	⁎
When a CO call is arriving (Receiving the Caller ID information):		
Switching CO Line Name / Caller ID Number / Caller ID Name	⁎	⁎

Conditions

- Flexible feature numbers can only be dialed while a dial tone is heard.
- If "⁎" or "#" is included in a feature number, it will not be possible for users with dial pulse (DP) telephone to access the feature.
- **Feature Number Conflicts**
  Examples: 1 and 11, 0 and 00, 2 and 21, 10 and 101, 32 and 321, etc.
- **Additional Digits**
  Some flexible feature numbers require additional digits to make the feature active. For example, to set Call Waiting, the feature number for "Call Waiting" must be followed by "1" and to cancel it, the same feature number should be followed by "0."
- Fixed Feature Numbers Type-1 or Type-2 can be selected by System Programming <Section 2.8 System Option, "41. Fixed Feature Number" in the Programming Guide> (Default = Type-1).

Programming Guide References

- 1.4 Extension Port Assignment
  - Attribute
  - DN
- 2.3 Numbering Plan
- 2.8 System Option
  - Fixed Feature Number

Features Guide References

None

User Manual References

- 6.1.2 Feature Numbers List

Floating Station

Description

Virtual extension numbers can be assigned to resources to make them appear as real extensions. These numbers are defined as Floating Directory Numbers (FDN).
The following resources can have FDNs:

Resource Name	Max. number of FDN	Incoming Call Type					
		DIL	DISA	DID / DID (ISDN)	TIE	Intercept Routing	Intercom Call
External Pager (TAFAS)	2	✔	✔	✔	–	✔	–
OGM Group (DISA)	8	✔	–	–	–	✔	–
Modem (Remote Administration)	1	✔	✔	✔	✔	–	✔
Extension Group	128	✔	✔	✔	✔	✔	✔
Phantom Extension	448	✔	✔	✔	✔	✔	✔
Incoming Group	96	✔	✔*	✔	✔*	✔*	✔*

"✔" indicates that the FDN can be assigned as the destination.

* When "DIL 1:N" is specified in "Group Type" setting of Incoming Group, this feature does not work.

Conditions

- FDNs cannot be used for setting a feature such as Call Forwarding, etc.

Installation Manual References

- 2.5.3 DID Card (KX-T96182)
- 2.5.4 T1 Digital Trunk Card (KX-T96187)
- 2.5.6 BRI Card (KX-TD50288)
- 2.5.7 PRI23 Card (KX-TD50290)
- 2.6.1 DISA Card (KX-T96191)
- 2.6.3 RMT Card (KX-T96196)
- 2.6.4 ERMT Card (KX-TD50197)

Programming Guide References

- 2.3 Numbering Plan
  - 1st Hundred Block Extension
  - 2nd Hundred Block Extension
  - 3rd Hundred Block Extension
  - 4th Hundred Block Extension
  - 5th Hundred Block Extension
  - 6th Hundred Block Extension
  - 7th Hundred Block Extension
  - 8th Hundred Block Extension
  - 9th Hundred Block Extension
  - 10th Hundred Block Extension
  - 11th Hundred Block Extension - 16th Hundred Block Extension
- 3.3 Extension Group
  - FDN
- 3.5 Incoming Group
  - FDN
- 3.6 OGM Group
  - FDN
- 4.6 External Paging
  - FDN
- 5.3 Phantom Extension
  - FDN
- 10.6 System Parameters
  - Remote FDN

Features Guide References

1.3 System Features

- Extension Group
- Incoming Group

1.5 Attended Features

- Direct Inward Dialing (DID)
- Trunk Answer From Any Station (TAFAS)

2.3 ISDN Attended Features

- Direct Inward Dialing (DID)

User Manual References

Not applicable.

Host PBX Access

Description

The system may be installed behind an existing host PBX. This is performed by connecting (extension) lines from the host PBX to CO line ports of the KX-TD500 System.

Conditions

- To enable Host PBX Access, put the host PBX line in a Trunk Group. The extension user can access the host PBX by selecting that CO line.
- **Host PBX Access Code**
  A Host PBX Access Code is required to access CO lines of the host PBX for making an outside call.
- **Automatic Pause Insertion**
  A pause, if programmed, can be inserted between the user-dialed Host PBX Access Code and the following digits. Program the pause time required by the Host PBX for that Trunk Group.
- **External Feature Access**
  Access to the host PBX during a conversation is also possible.

Programming Guide References

- 3.2 Trunk Group
  - Pause Time
  - PBX Access Code

Features Guide References

1.7 Dialing Features
- Pause Insertion, Automatic

1.12 Conversation Features
- External Feature Access

User Manual References

- 4.3.35 External Feature Access

Incoming Group

Description

To support efficient utilization of extensions, they can be grouped together as an Incoming Group.
Incoming Group is used to direct incoming calls (both extension and outside) to a group of answering extensions associated with the type of incoming calls.
Up to 96 Incoming Groups can be created in the system.

The following five different types of Incoming Group can be created:

Group Type	Description
Terminate	If the called extension is busy, Station Hunting redirects the incoming call to an idle extension within the same Incoming Group. By dialing the Floating Directory Number (FDN), the idle extension is searched in the order assigned in the Incoming Group, always starting from the first assigned extension. **(Station Hunting Group - Terminate).**
Ring	All the extensions in the Ring Group ring simultaneously.
Operator	Within an Operator Group, an operator-seeking call (extension / outside) may come in on a single operator (Single) or all operators in the group simultaneously (Multi) depending on System Programming.
UCD (Uniform Call Distribution)	Successive calls go to a different extension each time a call is received. Extensions are hunted in a circular way.
DIL 1:N	Used to group extensions or Extension Groups or both so that an incoming CO call comes in on multiple extensions simultaneously.

Conditions

- **Group Log-in, Log-out**
  Members of an Incoming Group (except Group Type: None) can leave the group temporarily when they are away from their desks, to prevent calls being sent to their extension (Group Log-out). They can return to the group when they are ready to answer a call (Group Log-in).
- A single extension can be assigned to up to eight different Incoming Groups at a time.
- When one extension is assigned as DN and FDN (Extension Group) simultaneously in the Incoming Group, the call is handled in the location of DN assignment.
- If the FDN of an Extension Group is assigned as an Incoming Group destination, calls directed to the Incoming Group are treated in the same manner as calls to their individual extension depending on the "Group Type" setting of the Incoming Group, not that of the Extension Group. However, there are the following exceptions:

  a) When "VM" or "AA" is specified in the "Group Type" setting of an Extension Group, and any group type except "DIL 1:N" is specified in the "Group Type" setting of an Incoming Group, calls directed to the Incoming Group do not come in on his extension.

b) When "VM" or "AA" is specified in the "Group Type" setting of an Extension Group, and "DIL 1:N" is specified in the "Group Type" setting of an Incoming Group, all the extensions belonging to the Extension Group work as a VM or AA group.

- Calls to a UCD group or an Operator group (Single) hunt for an idle extension in the order assigned in the Incoming Group. It is programmable whether to start at the extension following the last one called or to always start at the first assigned extension by System Programming <Section 3.5 Incoming Group, "Search Mode" in the Programming Guide>.
- This feature overrides the Restriction by the Tenant Service.
- **UCD Login Monitor**
  Login/Logout status of the UCD Group members can be monitored by the extension specified as the Supervisor Extension through Busy Lamp Field of the corresponding DSS button.
- The mailbox number can be assigned on an Incoming Group basis. When an incoming call is redirected to a VM extension by IRNA or Overflow feature, the system sends the digits of this mailbox number to the VPS. When "Mailbox No." is set to "Blank," the system sends the FDN to the VPS.
- If there is any message waiting notification in the mailbox of an Incoming Group, the message waiting lamp on the members of the Incoming Group will not turn on.
  If the mailbox number of the extension is assigned as that of an Incoming Group, a message waiting notification to the Incoming Group is left on the corresponding extension. The extension user can listen to the message in his mailbox simply by pressing the red lit MESSAGE lamp.

Programming Guide References

- 1.4 Extension Port Assignment
  - Group No.
- 2.3 Numbering Plan
  - Login / Logout
- 3.5 Incoming Group
  - Group No.
  - FDN
- 4.3 Extension Line
  - Group No.
- 4.7 ISDN Extension Line
  - Group No.

Features Guide References

1.3 System Features

- DIL 1:N Group
- Floating Station
- Operator Group

1.5 Attended Features

- Ring Group
- Uniform Call Distribution (UCD)

1.8 Ringing Features

- Log-In/Log-Out
- Station Hunting

User Manual References

Not applicable.

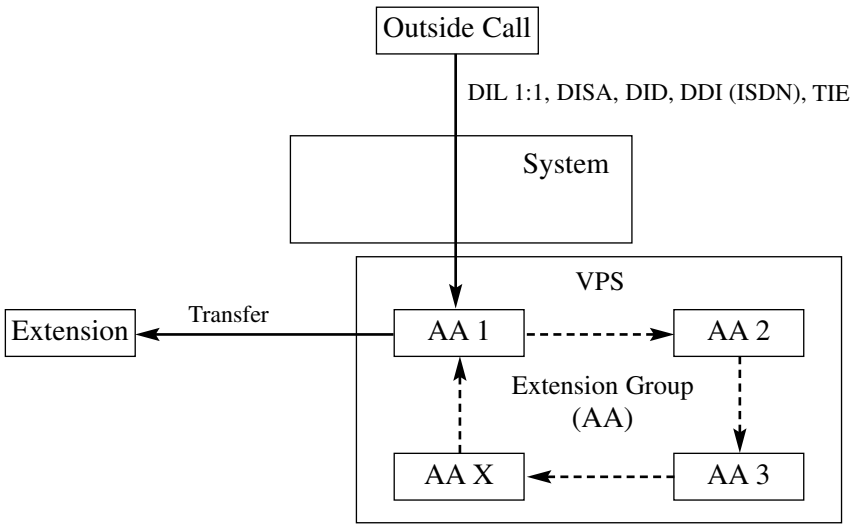
Integration, Automated Attendant (AA) Service

Description

This is one of the VPS Integration features.
The Automated Attendant (AA) Service, provided by the VPS, answers incoming calls and then routes the caller to the desired extension automatically.
If AA Service Integration is enabled, the KX-TD500 System transmits the Call Status Code (busy, answered, ringing, disconnected, etc.) to an AA extension before sending the normal call progress tones. These codes enable the VPS to immediately recognize the current status of the call and improve its call handling performance.
To utilize the AA Service Integration, group multiple AA extensions together as an Extension Group and assign the group type of it as "AA."
Within an AA Group, an incoming call hunts for an idle AA extension in a circular way. This ensures that callers who need the AA service can surely access it. Up to 128 AA Groups, each consisting of more than one extension in the same tenant, can be created in the system.
By default, Extension Group #127 is assigned as AA Group.

Automated Attendant (AA) Service

An AA extension answers incoming calls (extension, outside) and then transfers the caller to the desired extension automatically.



Integration Code (Call Status Code) Table

Code (default)	Call Status	Sent to the Voice Mail Port When
1	Ringback Tone	The extension dialed is ringing.
2	Busy Tone	The extension dialed is busy.

Integration Code (Call Status Code) Table

Code (default)	Call Status	Sent to the Voice Mail Port When
3	Reorder Tone	An invalid extension number is dialed or the call is inadvertently connected to another Voice Mail port (also heard when no DTMF receiver is available to the Voice Mail extension).
4	DND Tone	The extension dialed has set DND (Do Not Disturb) feature.
5	Extension Answer	The extension dialed is answered.
6	Forwarded to Voice Mail (Ringing)	The extension dialed is forwarded to Voice Mail and another Voice Mail port is able to answer. (This lets the first Voice Mail port, usually an Automated Attendant, send the call to the other Voice Mail ports.)
7	Forwarded to Voice Mail (Busy)	The extension dialed is forwarded to Voice Mail and no other Voice Mail ports are available to accept the call. (This signals the Voice Mail port, usually an Automated Attendant, to let the caller leave a message.)
8	Forwarded to Ext. (Ringing)	The extension dialed is forwarded to another, non-Voice Mail extension.
9	Confirmation Tone	The Message Waiting Lamp On or Message Waiting Lamp Off code is dialed successfully.
#9	Extension Disconnection	The caller disconnects. The central office must set a CPC signal to the PBX line for this signal to work for CO calls.

Conditions

- **Start AA Service after FWD, IRNA of CO call**
  When an outside call is routed to a VM port by Call Forwarding or IRNA feature, AA Service can be activated instead of VM Service by System Programming.
- **Call from AA port to AA port**
  Prevents or allows a call originated by an AA port of VPS to another AA port.

Programming Guide References

- 1.4 Extension Port Assignment
  - Group No.
- 1.5 VPS (DPT) Port Assignment
- 2.3 Numbering Plan
  - Login / Logout
- 3.3 Extension Group
  - FDN
  - Tenant No.
  - [Overflow Setting] Destination – Day / Night
  - [Overflow Setting] Timer
  - Group Type
- 4.2 Trunk Line
  - Destination—Day/Night/Lunch/Break
- 4.3 Extension Line
  - Group No.
  - [COS No.] Primary
  - [COS No.] Secondary
  - Mailbox No.
- 5.10 VPS Integration
  - [Integration Code] Ringback Tone
  - [Integration Code] Busy Tone
  - [Integration Code] Reorder Tone
  - [Integration Code] DND Tone
  - [Integration Code] Extension Answer
  - [Integration Code] Extension Disconnection
  - [Integration Code] Confirmation Tone
  - [Integration Code] FWD to VM Ringback Tone
  - [Integration Code] FWD to VM Busy Tone
  - [Integration Code] FWD to Extension Ringback Tone
  - Start AA service after FWD, IRNA of CO call
  - Call from AA port to AA port

Features Guide References

1.3 System Features

- Extension Group
- Integration, DPT
- Integration, Inband
- Integration, Voice Mail (VM) Service
- Integration, VPS

User Manual References

Not applicable.

Integration, DPT[*1]

Description

This is one of the VPS Integration features. With DPT Integration, the KX-TD500 System sends the VPS the information and commands on the calling extension via DPT interfaced data link to help it work more effectively. This is available only with Panasonic KX-TVS series VPS.

Using the information and commands, the VPS can:

a) identify the extension number of the caller

b) identify the trunk group number of the caller

c) know where the call is forwarded from and its line status

d) recognize what the caller wants to do.

In addition to VM Service Integration and AA Service Integration, following special features are available only with DPT Integration.

-**Auto Configuration**
-**Live Call Screening (LCS)**
-**Two-Way Recording into the Voice Mail**
-**Two-Way Transfer**

Conditions

- A maximum of eight Panasonic Voice Processing Systems can be connected to the KX-TD500 system.
- To utilize this feature, DOHCA card and DLC card (KX-TD50172) / DHLC card (KX-TD50170) are required.
- The first DLC/DHLC card will support jacks 1 to 8 of the first TVS300 system. A second card will support jacks 9 to 12 of the TVS300 system.
  A third and fourth card are needed to support a second TVS300 system which is fully configured.
- The jack with the lowest physical number of the DHLC / DLC card must be connected to the VPS port with the lowest physical number.

Installation Manual References

- 2.3.3 DOHCA Card
- 2.4.6 DHLC Card (KX-TD50170)
- 2.4.7 DLC Card (KX-TD50172)

[*1] Available when the Digital Super Hybrid System is connected to a Digital Proprietary capable Panasonic Voice Processing System (one that supports Digital Proprietary Telephone [DPT] integration; e.g., KX-TVS100).

Programming Guide References

- 1.2 Slot Assignment
- 1.4 Extension Port Assignment
  - Card No.
  - Attribute
- 1.5 VPS (DPT) Port Assignment
  - TVS No.
  - VPS Card
  - Type
  - Jack No.
  - Port No.
  - [Ext No.1] DN
  - [Ext No.1] Group No.
  - [Ext No.2] DN
  - [Ext No.2] Group No.
  - Status
- 2.8 System Option
  - Sending DID Number to VPS
- 3.2 Trunk Group
  - Intercept Destination – Day / Night
- 3.3 Extension Group
  - Group No.
  - FDN
  - Tenant No.
  - [Overflow Setting] Destination – Day / Night
  - Group Type
- 4.2 Trunk Line
  - Incoming Type
  - Destination—Day/Night/Lunch/Break
- 4.3 Extension Line
  - Group No.
  - Mailbox No.
  - [COS No.] Primary
  - [COS No.] Secondary
  - Intercept Destination — Day / Night
- 5.10 VPS Integration
  - Turn off control of Message Waiting lamp
  - Extension's mailbox number

Features Guide References

1.3 System Features

- Automatic Configuration
- Integration, Automated Attendant (AA) Service
- Integration, Voice Mail (VM) Service
- Integration, VPS

1.9 Answering Features

- Live Call Screening (LCS)

1.12 Conversation Features

- Two-Way Recording into the Voice Mail

User Manual References

Not applicable.

Integration, Inband

Description

This is one of the VPS Integration features.
With Inband Integration, the KX-TD500 System sends the certain information to the VPS with DTMF tones. Inband Integration can be categorized into the following two types:

1. **Voice Mail (VM) Service Integration**
   This integration works together with Call Forwarding and IRNA features. When activated, the KX-TD500 System sends the digits of the mailbox number of the called extension with DTMF tone to the VPS before connecting the caller.
   These digits are commonly known as the Follow-on ID.
   As a result, the caller who does not know the mailbox number of the corresponding extension can leave a message.
2. **Automated Attendant (AA) Service Integration**
   This integration works together with AA service of the VPS. When activated, the KX-TD500 System informs the VPS of the status of the call (busy, answered, ringing, etc.) by sending a code with DTMF tone before sending the normal call progress tone (busy tone, ringback tone, etc.).
   These codes enable the VPS to immediately recognize the current status of the call and improve its call handling performance.

Conditions

- To utilize this feature, one of the following extension cards which support the SLT interface is required: DHLC, ESLC, HLC, SLC or SLC-M.

Installation Manual References

- 2.4.1 HLC Card (KX-T96170)
- 2.4.3 SLC Card (KX-T96174)
- 2.4.4 SLC-M Card (KX-T96175)
- 2.4.6 DHLC Card (KX-TD50170)
- 2.4.8 ESLC Card (KX-TD50175)

Programming Guide References

- 3.2 Trunk Group
  - Intercept Destination – Day / Night
- 3.3 Extension Group
  - FDN
  - Tenant No.
  - [Overflow Setting] Destination – Day / Night
  - Group Type
- 4.2 Trunk Line
  - Incoming Type
  - Destination—Day/Night/Lunch/Break
- 4.3 Extension Line
  - Group No.
  - Name
  - Mailbox No.
  - [COS No.] Primary
  - [COS No.] Secondary
  - Intercept Destination — Day / Night
- 5.10 VPS Integration
  - [Integration Code] Ringback Tone
  - [Integration Code] Busy Tone
  - [Integration Code] Reorder Tone
  - [Integration Code] DND Tone
  - [Integration Code] Extension Answer
  - [Integration Code] Extension Disconnection
  - [Integration Code] Confirmation Tone
  - [Integration Code] FWD to VM Ringback Tone
  - [Integration Code] FWD to VM Busy Tone
  - [Integration Code] FWD to Extension Ringback Tone
  - [Voice Mail Command] Leave Message
  - [Voice Mail Command] Get Message
  - [Voice Mail Command] AA Service
  - [Voice Mail Command] VM Service
  - DTMF signal duration
  - Pause timing before sending DTMF signal (Follow-on ID)
  - Pause timing before sending DTMF signal (RBT, BT)
  - Turn off control of Message Waiting lamp
  - Extension's mailbox number

Features Guide References

1.3 System Features

- Integration, Automated Attendant (AA) Service
- Integration, DPT
- Integration, Voice Mail (VM) Service
- Integration, VPS

User Manual References

Not applicable.

Integration, Voice Mail (VM) Service

Description

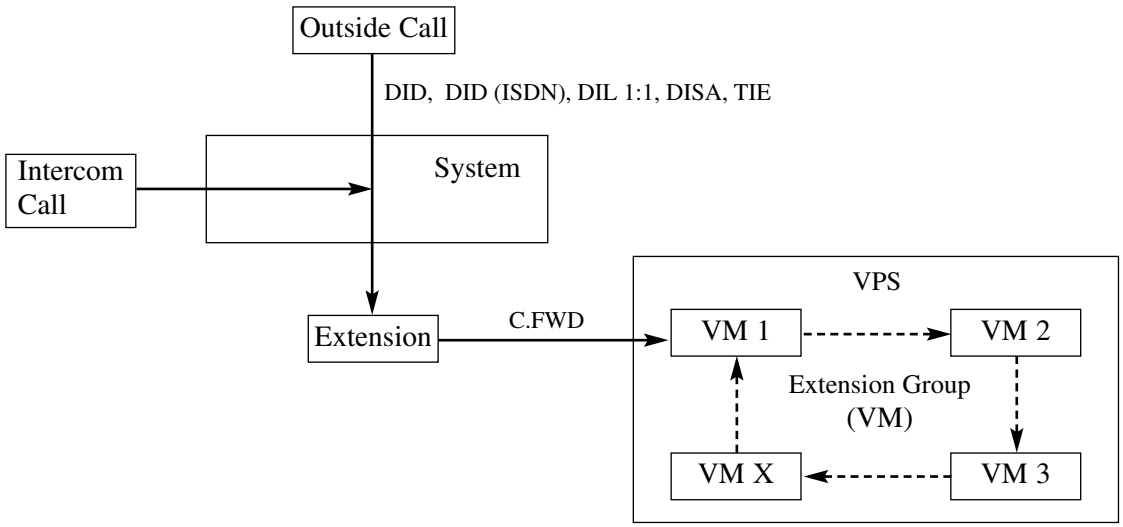
This is one of the VPS Integration features.
The Voice Mail (VM) Service, provided by the VPS, is a voice message receiving (taking) and delivery service which allows callers to leave messages in the mailbox of the desired extension user.
If VM Service Integration is enabled, the KX-TD500 System connects the caller to a VM extension and sends the mailbox number **(Follow-on ID)** of the corresponding extension so that the caller can leave the message in the mailbox of the corresponding extension without knowing their mailbox number.
To utilize the VM Service Integration, group multiple VM extensions together as an Extension Group and assign the group type of it as "VM."
By default, Extension Group #126 is assigned as VM Group.
Within a VM Group, an incoming call hunts for an idle VM extension in a circular way. This ensures that callers who need the VM service can surely access it. Up to 128 VM Groups, each consisting of more than one extension in the same tenant, can be created in the system.

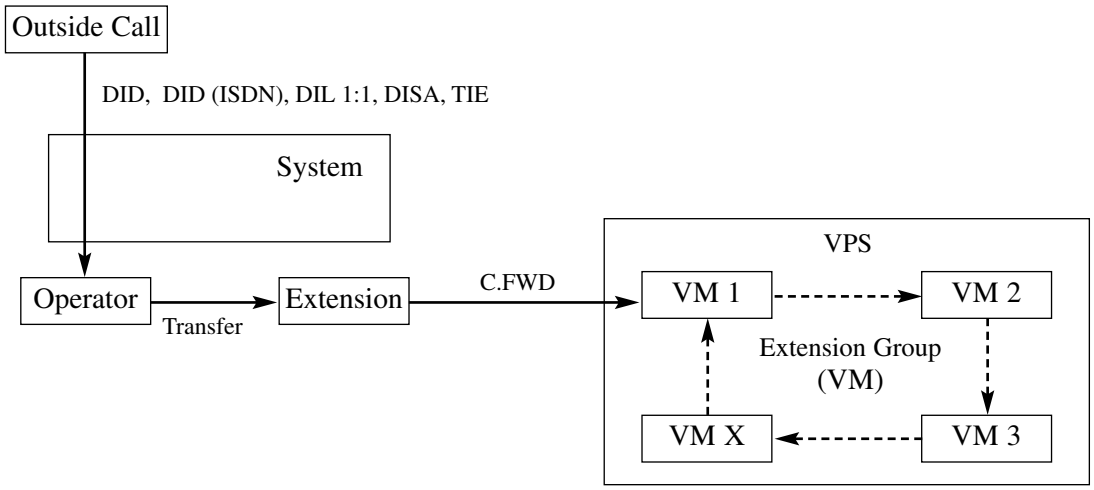
This feature applies to the following calls:

- Call Forwarding – All Calls to VM extensions
- Call Forwarding – Busy to VM extensions
- Call Forwarding – No Answer to VM extensions
- Call Forwarding – Busy / No Answer to VM extensions
- Hunting group overflow to VM extensions
- Intercept Routing No Answer (IRNA) to a VM extension
- Notification by Message Waiting Lamp
- Transfer by VM Transfer button
- UCD Overflow to VM extensions

System Explanation

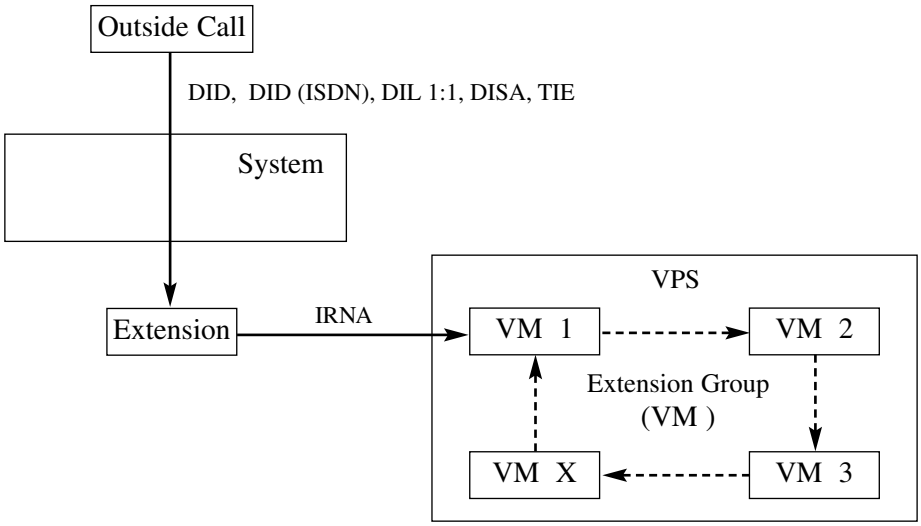
1. **Call Forwarding (All Calls, Busy, No Answer, Busy / No Answer) to a VM extension**
   If the extension user sets Call Forwarding to a VM extension, the call directed to that extension is forwarded to a VM extension with Follow-on ID of the extension user.





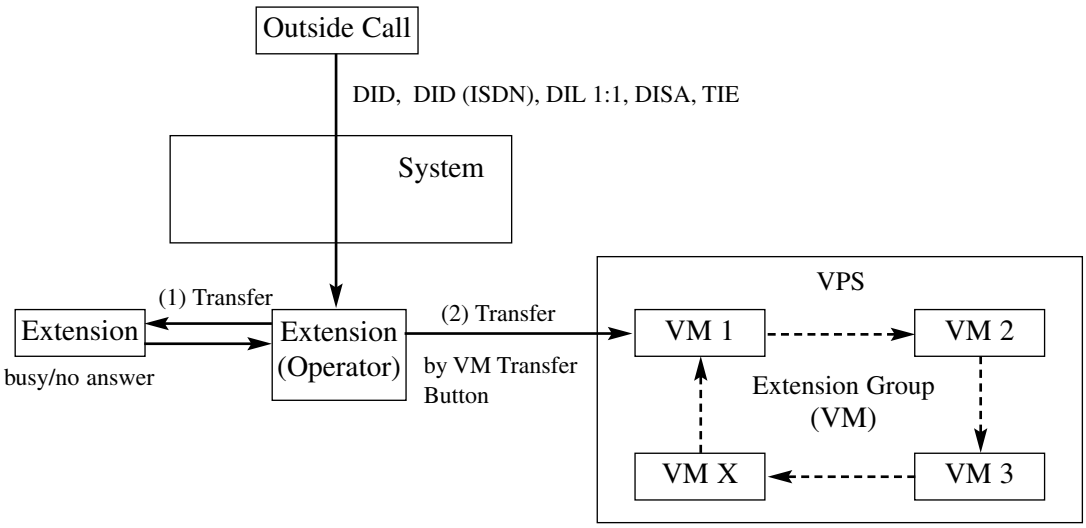
2. Intercept Routing No Answer (IRNA) to a VM extension

If an incoming CO call directed to a certain extension is not answered within a specified period of time (IRNA timer), the call is redirected to a VM extension with Follow-on ID of the corresponding extension.



3. Transfer by VM Transfer button

VM Transfer button is used to transfer a call to a VM extension with Follow-on ID of the corresponding extension so that the caller can leave the message in the mailbox of the destination extension user without knowing the mailbox number.



4. Notification by Message Waiting Lamp

If the caller leaves a message in a mailbox, the VPS notifies the corresponding extension user that there is a message in his mailbox by turning on the Message Waiting Lamp on his extension.

The extension user can listen to the message simply by pressing the red lit Message Waiting Lamp.

Conditions

- **IRNA of DIL 1:N calls**
  If a DIL 1:N call (an outside call which comes in on multiple extensions simultaneously) is not answered within a specified period of time, the system redirects the call to the pre-determined covering extension. If a VM extension is assigned as the covering extension, the VM port automatically starts the AA (Automated Attendant) service of the VPS.
- **Mailbox Number**
  The extension user's extension number is assigned as the mailbox number by default <Section 4.3 Extension Line, "Mailbox No." in the Programming Guide>.
  Mailbox number can be changed by System Programming <Section 5.10 VPS Integration, "Extension's mailbox number" in the Programming Guide>.
- **Voice Mail Transfer**
  Pressing the Voice Mail Transfer button and dialing the extension number allows the extension user to transfer the call to the corresponding mailbox. In this case, Follow-on ID function is available.
- **Voice Mail Transfer button**
  This button can be assigned to a flexible (CO, DSS) button by Station, User or System Programming.
- **Data Line Security**
  The Voice Mail extension should be set to "Data Line Security" to achieve proper recording.
- **Busy Station Signaling**
  The Voice Mail extension can execute the "Busy Station Signaling (BSS)" function to the busy extension.
- **Turn off Control of Message Waiting Lamp**
  Used to determine whether the System turns off the Message Waiting lamp or the VPS does when the VPS answers the callback from the message receiver.
- **Sending out Follow-on ID after FWD**
  Used to determine whether to send or not the Follow-on ID after an outside call is forwarded to a VM extension.
- **Sending out Follow-on ID after IRNA**
  Used to determine whether to send or not the Follow-on ID after an outside call is redirected to a VM extension by IRNA feature.

Installation Manual References

- 2.4 Extension Cards

Programming Guide References

- 1.4 Extension Port Assignment
  - Group No.
- 1.5 VPS (DPT) Port Assignment
- 2.3 Numbering Plan
  - Message Waiting Set / Cancel / Call Back
  - Call FWD - Do Not Disturb Set / Cancel
  - Login / Logout
- 3.3 Extension Group
  - FDN
  - Tenant No.
  - [Overflow Setting] Destination – Day / Night
  - Group Type
- 4.2 Trunk Line
  - Destination—Day/Night/Lunch/Break
- 4.3 Extension Line
  - Group No.
  - Name
  - Mailbox No.
  - CO Key
  - [COS No.] Primary
  - [COS No.] Secondary
  - [LCS Setting] Status
  - [LCS Setting] Operation Mode
  - [LCS Setting] Recording Mode
  - [LCS Setting] LCS Password
- 4.4 DSS Console
  - DSS Key
- 5.10 VPS Integration
  - [Voice Mail Command] Leave Message
  - [Voice Mail Command] Get Message
  - [Voice Mail Command] AA Service
  - [Voice Mail Command] VM Service
  - Turn off control of Message Waiting lamp
  - Extension's mailbox number
  - Sending out Follow-on ID after FWD
  - Sending out Follow-on ID after IRNA

Features Guide References

1.3 System Features

- Extension Group
- Integration, DPT
- Integration, Inband
- Integration, VPS

1.11 Transferring Features

- Call Forwarding
- Intercept Routing

1.17 Display Features

- Message Waiting

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.82 Voice Mail Transfer
- 4.3.83 VPS Integration

Integration, VPS

Description

The Voice Processing System (VPS) provides Automated Attendant (AA) and Voice Mail (VM) Services. The KX-TD500 System works well with all Panasonic KX-TVS series Voice Processing System (VPS) and it can be programmed to work with most other manufactures' VPSs that fully support Inband Integration.
However, since both the PBX and VPS are independent systems, "Integration" with the VPS is necessary to make the two systems work more closely.
Without integration, both systems will work separately without knowing the status of other system.

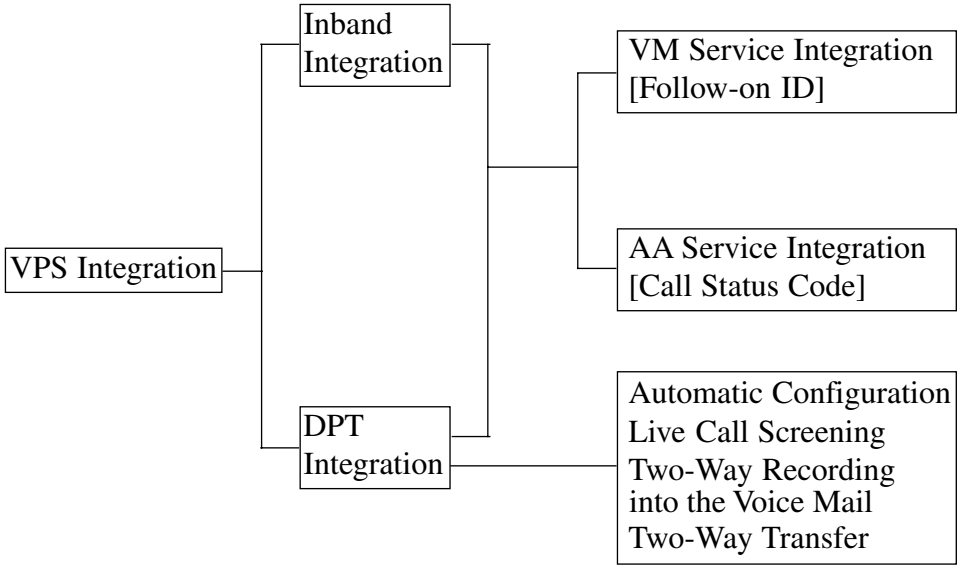
How the KX-TD500 System communicate with VPS:

1. **Inband Integration**
   The KX-TD500 System sends the VPS several codes with DTMF tone via speech path. Available with not only Panasonic KX-TVS series VPSs but with most other manufactures' VPSs that fully support Inband Integration.
2. **DPT Integration**
   The KX-TD500 System sends the VPS the information and commands over the DPT data link. Available with Panasonic KX-TVS series VPS only.

Available features:

1. **Voice Mail (VM) Service Integration**
   Allows the caller to leave a message in the mailbox of their destination party without knowing the mailbox number.
2. **Automated Attendant (AA) Service Integration**
   Used to improve the call handling performance of the VPS.
3. **Special features for DPT Integration (DPT Integration only)**
   —Auto Configuration
   —Live Call Screening (LCS)
   —Two-way Recording into the Voice Mail
   —Two-way Transfer

Outline sketch of VPS Integration



Conditions

None

Programming Guide References

System Programming is not required.

Features Guide References

None

User Manual References

Not applicable.

Limited Call Duration

Description

Limited Call Duration is a system programmable feature that disconnects a CO call when a specified timer expires. A warning tone is sent to the extension user 15 seconds, 10 seconds, and 5 seconds before the time limit.

Conditions

- **Class of Service (COS) programming**
  Limiting the call duration can be activated or deactivated on a COS basis for each extension by System Programming <Section 2.4 Class of Service (COS), "Time Limit of Outside Calls" in the Programming Guide>.
- **Extension-to-CO Line Call**
  Any outside call except CO-to-CO line call is limited by this feature. For CO-to-CO line calls, CO-to-CO Line Call Duration Time is activated.
- This feature applies to the following calls:
  a) Ordinary CO calls
  b) Calls forwarded by "Call Forwarding to Trunk" feature[*1]
  c) Calls transferred by "Call Transfer to Trunk" feature[*1]
- **Outgoing CO calls only or both**
  This feature may apply to outgoing CO calls only or both outgoing and incoming CO calls. This is determined by System Programming <Section 2.8 System Option, "5. Limited call duration" in the Programming Guide>.

Programming Guide References

- 2.4 Class of Service (COS)
  - Time Limit of Outside Calls
- 2.5 System Timer
  - Extension-to-CO Line Call Duration Time
- 2.8 System Option
  - Limited call duration

Features Guide References

1.11 Transferring Features
- Call Forwarding
- Call Transfer

1.12 Conversation Features
- Conference, Unattended

[*1] Determined by COS of the extension who initiated the feature.

User Manual References

Not applicable.

Lockout

Description

If one party in a conversation goes on-hook, they both are disconnected from the speech path automatically. A reorder tone is sent to the off-hook party before it is disconnected. No operation is necessary.

Conditions

- If nothing is dialed within a certain period of time after the other party goes on-hook, a reorder tone is sent to the extension user and then is disconnected from the speech path.

Programming Guide References

System Programming is not required.

Features Guide References

None

User Manual References

Not applicable.

Manager Extension

Description

One extension in each tenant can be assigned as the Manager Extension. This extension can perform the following Manager services:

<System / Tenant>

- BGM—External turn on / off
- Local Alarm Indication
- OGM (outgoing message) record / play
- Trunk Busy-out set / cancel
- Trunk Route Control

<To other extensions>

- Caller ID Log Lock clear
- Live Call Screening Password clear
- Remote DND Control set / cancel
- Remote FWD (Call Forwarding) Cancel - Once
- Remote Station Lock Control set / cancel
- Switching COS
- Timed Reminder (Wake-Up Call), Remote set / cancel / confirm

Conditions

- **Operator Extensions**
  Operator extensions can also perform the above mentioned Manager Service functions except "Local Alarm Indication."
- **Tenant Service**
  If Tenant Service is employed, the Manager extension can be assigned to each tenant individually.

Programming Guide References

- 2.2 Tenant
  - Manager Extension DN

Features Guide References

1.3 System Features

- Remote Station Feature Control
- Remote Station Lock Control

User Manual References

- 4.4 Operator / Manager Service Features

Mixed Station Capabilities

Description

The KX-TD500 system supports a wide range of telephone sets as follows:

- **Digital Proprietary Telephones (DPTs)**
- **Analog Proprietary Telephones (APTs)**
- **Single Line Rotary Telephones — Dial Pulse Signaling**
- **Single Line Touch Tone Telephones — Tone Dialing**
- **ISDN Telephones**

The super hybrid method used in this system allows any telephone to be connected to an extension port without a special adaptor.

Extension cards and compatible terminals

↓ Card / Terminal →	DSS Console	Proprietary Telephone		SLT	ISDN Telephone
		DPT	APT		
HLC (KX-T96170)	✔		✔	✔	
PLC (KX-T96172)	✔		✔		
SLC (KX-T96174)				✔	
SLC-M (KX-T96175)				✔	
DHLC (KX-TD50170)	✔	✔	✔	✔	
DLC (KX-TD50172)	✔	✔			
ESLC (KX-TD50175)				✔	
BRI (KX-TD50288)					✔
PRI23 (KX-TD50290)					✔

" ✔" indicates that the extension card is available for the terminal.

Conditions

- If a telephone is replaced by another one, the stored data (such as feature button storage) is held for the new one.

Installation Manual References

- 2.4 Extension Cards
- 2.5.6 BRI Card (KX-TD50288)
- 2.5.7 PRI23 Card (KX-TD50290)

Programming Guide References

System Programming is not required.

Features Guide References

None

User Manual References

Not applicable.

Music on Hold

Description

The system provides "Music on Hold" to callers on hold, if available.

Conditions

- Operations such as Call Hold, Exclusive Call Hold or Consultation Hold generates Music on Hold.
- **Music on Hold or Ringback tone**
  It is programmable whether to send a ringback tone or "Music on Hold" to the caller while his call is being transferred.
  To send "Music on Hold" to the caller, the following optional equipment and System Programming are required:
  — Connect External Music Source, such as a radio, to the system <Section "2.8.2 External Music Source" in the Installation Manual>.
  — Select 'MUS1' or 'MUS2' in "Music on Hold Source" menu <Section "2.2 Tenant" in the Programming Guide>.
  — Select 'Music on Hold' in "1. Sound source during transfer" menu <Section "2.8 System Option" in the Programming Guide>.
- **Hardware Requirements**
  It is necessary to connect a user-supplied external music source such as a radio to the system. Up to two external music sources can be connected to the system.
- The music source is used for Music on Hold or BGM or both. If external music sources are in use, you can select a music source for each usage.

Installation Manual References

- 2.8.2 External Music Source

Programming Guide References

- 2.2 Tenant
  - Music on Hold Source
  - BGM Source
- 2.8 System Option
  - Sound source during transfer

Features Guide References

1.10 Holding Features
- Call Hold
- Consultation Hold

1.15 Proprietary Telephone Features
- Background Music (BGM)

User Manual References

Not applicable.

Night Service

Description

The system supports both Night and Day modes of operation in a different arrangement. The Day mode includes the Lunch and Break mode. Only a DIL destination can perform in Lunch / Break mode. And, any other feature can perform in Day mode. The system operation for originating and receiving calls can be different for day and night modes. For example, the system operation for restricting toll calls can be arranged separately to prevent unauthorized toll calls at night.

Switching the Day / Night / Lunch / Break Mode

Day / Night / Lunch / Break mode can be switched either automatically or manually.

Switching Type	Description
Automatic	The system will switch the Day / Night / Lunch / Break mode at the programmed time each day. The starting time of the Day / Night / Lunch / Break mode can be set for each day by System Programming <Section 2.2 Tenant, "Auto Start Time" in the Programming Guide>.
Manual	The extension allowed by COS (Class of Service) programming, the Manager and the Operator can switch the Day / Night / Lunch / Break mode by dialing the feature number or pressing the Day / Night button.

Lighting Patterns of the Day / Night button

The light patterns of the Day / Night button are as follows:

Mode	CO button	DSS button (KX-T7440 / KX-T7441)	DSS button (Others)
Day	Off	Off	Off
Night	Red ON	Red ON	Red ON
Lunch	Green ON	Green ON	Off
Break	Green slow flash	Green slow flash	Off

Conditions

- **Class of Service (COS) programming**
  COS programming <Section 2.4 Class of Service (COS), "Switching Day / Night Mode" in the Programming Guide> determines the extensions that can perform this feature.
- **Day / Night button**
  Day / Night button can be assigned to a flexible CO / DSS button by Station, User or System Programming.

- The following programming items may be assigned in a different way between day mode and night mode:
  (2.2 Tenant)
  — Alert Extension – Day / Night
  (2.4 Class of Service (COS))
  — TRS Level – Day / Night
  (2.4.1 Trunk Group Setting)
  — Trunk Group No. 01-48 – Day / Night
  (3.2 Trunk Group)
  — Intercept Destination – Day / Night
  (3.3 Extension Group)
  — [Overflow Setting] Destination – Day / Night
  (3.5 Incoming Group)
  — [Overflow Setting] Destination – Day / Night
  (4.2 Trunk Line)
  — Destination – Day / Night / Lunch / Break
  (4.3 Extension Line)
  — Intercept Destination – Day / Night
  (4.5 Doorphone)
  — Destination – Day / Night
  (9.2 DID Dial Registration)
  — Destination – Day / Night
- There are 2 types of switching modes: "Auto" and "Manual." The mode is set by the PC programming or by entering the feature number "Night Mode Set / Cancel" or pressing the Day / Night button by allowed extension on a tenant basis.
  When the system is in "Auto" mode, the mode will be switched automatically in accordance with timetable in 2-1 Tenant screen of the PC programming.
  When the system is in "Manual" mode, the system keeps the current mode even though the time to change the mode automatically has arrived.
- If DIL destination is not assigned for Lunch / Break mode, DIL destination performs in Day mode as usual.

Programming Guide References

- 2.2 Tenant
  - Alert Extension – Day / Night
  - DAY / NIGHT Switching Mode
  - Day (SUN-SAT)
  - Night (SUN-SAT)
  - Lunch-Start (SUN-SAT)
  - Lunch-End (SUN-SAT)
  - Break-Start (SUN-SAT)
  - Break-End (SUN-SAT)
- 2.3 Numbering Plan
  - Night Mode Set / Cancel
- 2.4 Class of Service (COS)
  - TRS Level – Day / Night
  - Trunk Group No. 01-48 – Day / Night
  - Switching Day / Night Mode
- 3.2 Trunk Group
  - Intercept Destination – Day / Night
- 3.3 Extension Group
  - [Overflow Setting] Destination – Day / Night
- 3.5 Incoming Group
  - [Overflow Setting] Destination – Day / Night
- 4.2 Trunk Line
  - Destination—Day/Night/Lunch/Break
- 4.3 Extension Line
  - CO Key
  - Intercept Destination — Day / Night
- 4.4 DSS Console
  - DSS Key
- 4.5 Doorphone
  - Destination – Day / Night
- 9.2 DID Dial Registration
  - Destination – Day/Night

Features Guide References

None

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.48 Night Service On/Off

Off Premise Extension (OPX)

Description

SLTs installed off the premise can be operated via a public or private network in the same way as extensions on the premise. These telephones are called Off Premise Extensions (OPX).

Conditions

- **Hardware Requirements**
  OPX card (KX-T96185) or T1 Digital Trunk card (KX-T96187), and OPX Power Unit (KX-T96186) are required.
- **Ring Tone Pattern**
  Any call to an OPX telephone rings like a CO call.
- **Call Restriction**
  Calls between OPX and Doorphone are restricted. That is, both "Calling from OPX to Doorphone" and "Calling from Doorphone to OPX" are not possible.

Installation Manual References

- 2.3.4 Power Unit
- 2.4.5 OPX Card (KX-T96185)
- 2.5.4 T1 Digital Trunk Card (KX-T96187)

Programming Guide References

- 1.6 T1 Port Assignment
  - Channel Type
  - DN
- 4.3 Extension Line

Features Guide References

None

User Manual References

Not applicable.

Operator Group

Description

It is efficient to handle a high volume of operator-seeking calls by a group of extensions called "Operator Group," which can consist of one or more extensions.

[Operator Features]

The extension assigned as an Operator has the ability to perform the following operations:

<System / Tenant>

- BGM—External turn on / off
- OGM (outgoing message) record / play
- Trunk Busy-out set / cancel
- Trunk Route Control

<To other extensions>

- Caller ID Log Lock clear
- Live Call Screening Password clear
- Remote DND Control set / cancel
- Remote FWD (Call Forwarding) Cancel - Once
- Remote Station Lock Control set / cancel
- Switching COS
- Timed Reminder (Wake-up Call), Remote set / cancel /confirm

[Treatment of Operator - Seeking Calls]

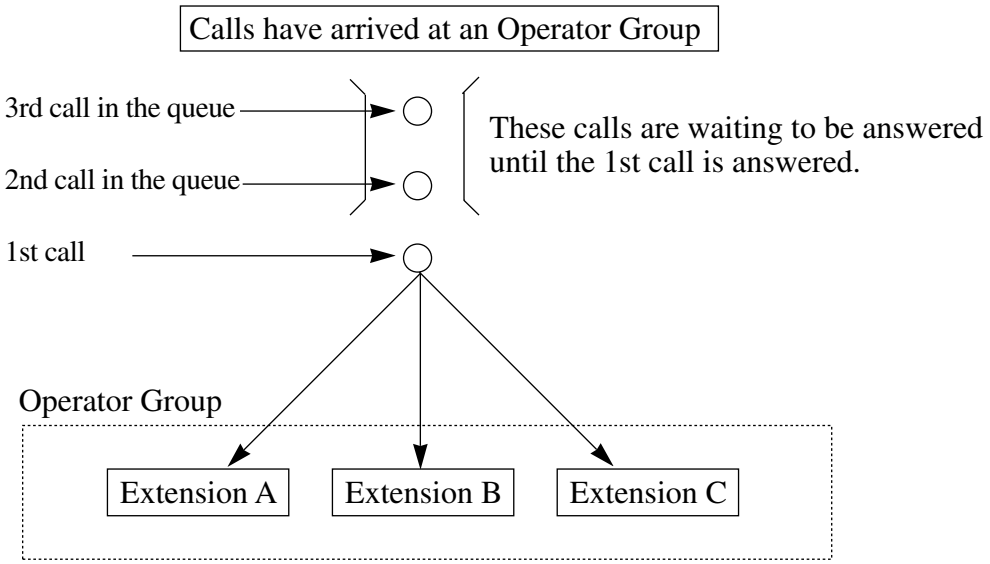
Within an Operator Group, an operator-seeking call (extension / outside) may come in on a single operator (Single) or all operators in the group simultaneously (Multi) depending on System Programming <Section 3.3 Extension Group / 3.5 Incoming Group "[Operator Setting] Ringing Type" in the Programming guide>.

Operator Group can be made up by assigning the group type of an Extension Group / Incoming Group to "Operator."
By default, Extension Group #128 is assigned as Operator Group.

(1) Outline sketch of Operator feature

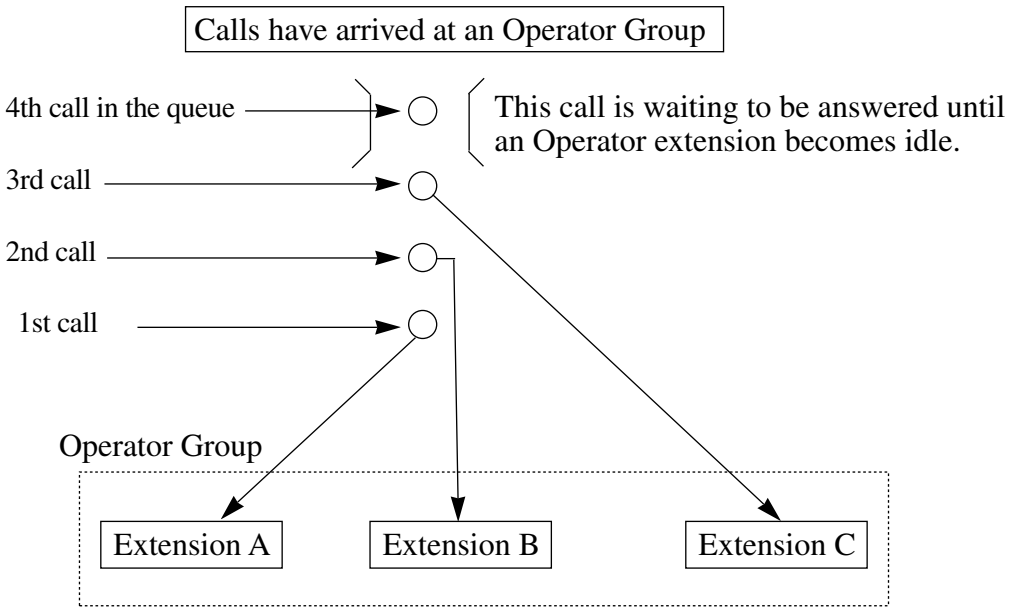
1. When "Ringing Type" is set to "Multi"

An incoming call (intercom / outside call) arrives at all Operator extensions at the same time.

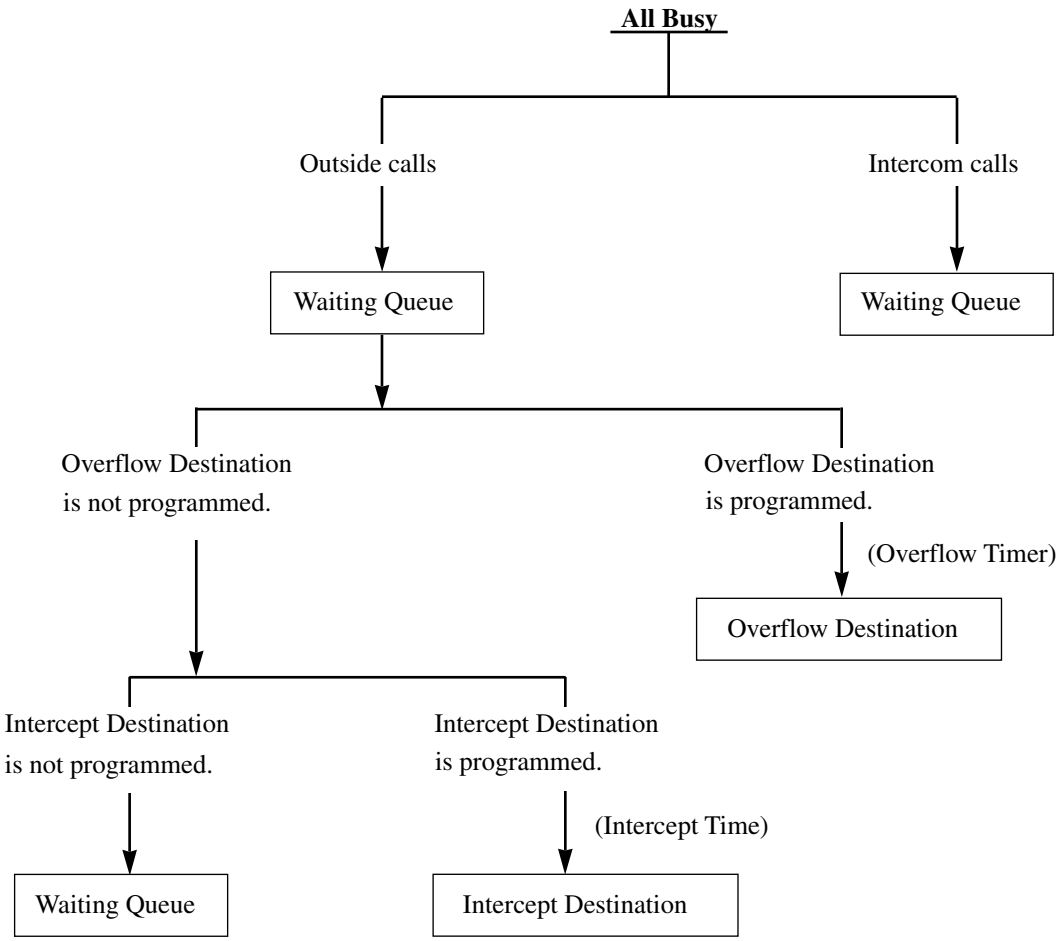

Calls have arrived at an Operator Group
3rd call in the queue
2nd call in the queue
These calls are waiting to be answered until the 1st call is answered.
1st call
Operator Group
Extension A
Extension B
Extension C

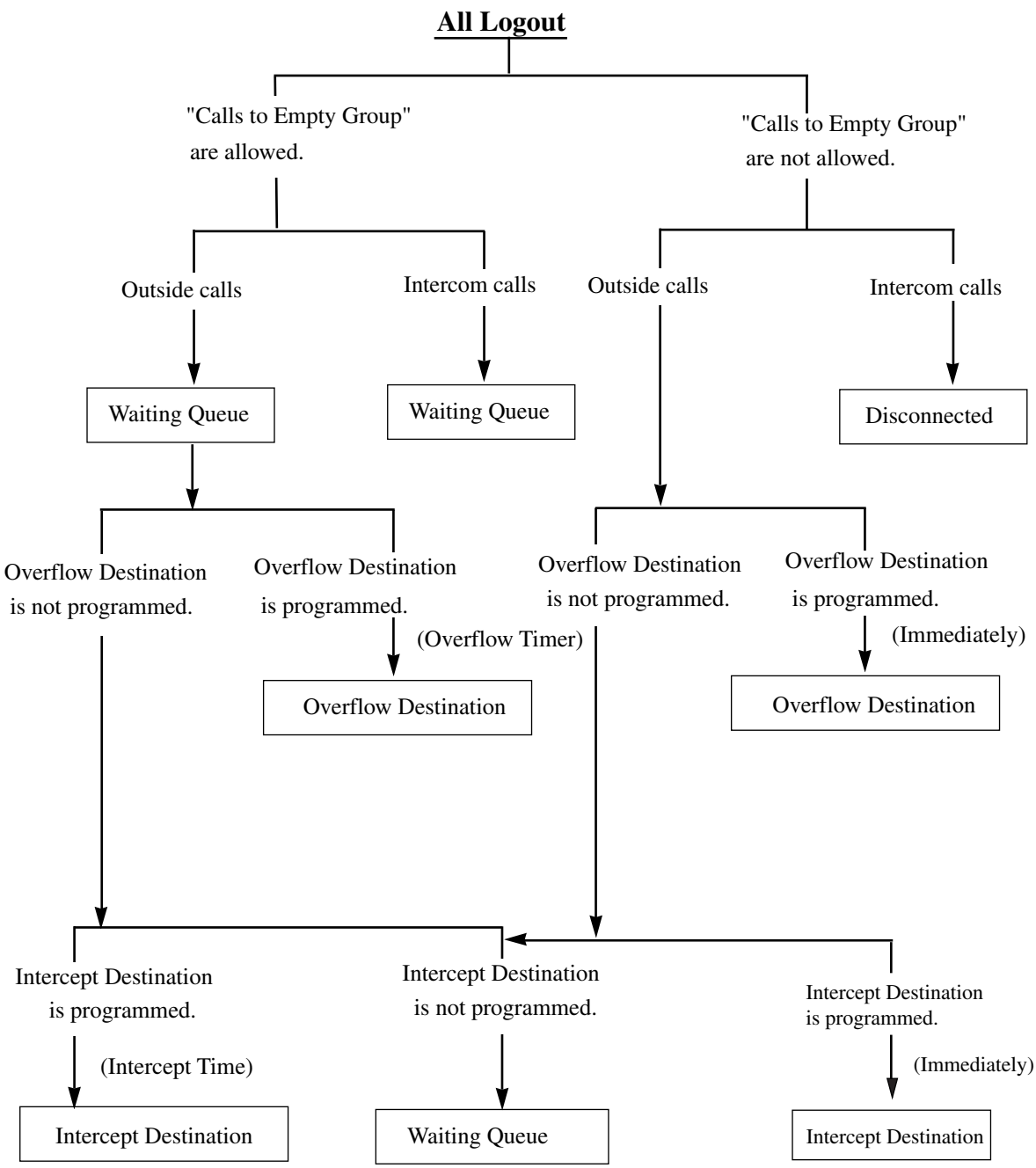
2. When "Ringing Type" is set to "Single"

An incoming call (intercom / outside call) arrives at an Operator extension.



(2) What if all Operator extensions are busy?





Note

- An incoming call which is arriving at a CO key of an Operator PT extension is regarded as an arrived call.

Conditions

- **Tenant Service**
  If "Tenant Service" is employed, each tenant can have its own unique "Operator Group" in the Extension Group independently.

Programming Guide References

- 1.4 Extension Port Assignment
  - Group No.
- 2.3 Numbering Plan
  - Login / Logout
  - Group Login / Logout
- 3.3 Extension Group
  - FDN
  - Tenant No.
  - [Overflow Setting] Destination – Day / Night
  - [Overflow Setting] Timer
  - Group Type
  - Calls to Empty Group
  - [Operator Setting] Ringing Type
  - [Operator Setting] Call Priority
- 3.5 Incoming Group
  - FDN
  - [Overflow Setting] Destination – Day / Night
  - [Overflow Setting] Timer
  - Group Type
  - [Operator Setting] Ringing Type
  - [Operator Setting] Call Priority
  - Calls to Empty Group
- 4.2 Trunk Line
  - Destination—Day/Night/Lunch/Break
- 4.3 Extension Line
  - Group No.

Features Guide References

1.3 System Features
- Extension Group
- Incoming Group

1.6 Originating Features
- Operator Call

User Manual References

- 4.4 Operator / Manager Service Features

Outgoing Message (OGM)

Description

Allows the Manager or an Operator to record and playback Outgoing Messages. The following three types of Outgoing Messages can be recorded.

DISA message:
This message is played when an outside caller accesses the system via DISA line.

Timed Reminder (wake-up) message:
This message is used in Timed Reminder. When answering the Timed Reminder alarm (often used as a wake-up call), the extension user will hear this message.

UCD (Uniform Call Distribution) message:
This message is played to the outside callers in conjunction with the UCD feature.

Conditions

- **Hardware Requirements**
  A DISA card (KX-T96191) is required to record an OGM.
  Up to eight DISA cards can be installed in the system.
- One OGM message can be recorded on a DISA card.
- **OGM Group**
  Recording of OGM is performed per OGM Group (1-8) which consists of one or more DISA cards. Up to eight OGM Groups are available in the system.
- **OGM Type**
  OGM Type is decided on an OGM Group basis.
- **Tenant Service**
  If Tenant Service is employed, the affiliation of OGM Group should be decided by System Programming.

Installation Manual References

- 2.6.1 DISA Card (KX-T96191)

Programming Guide References

- 2.2 Tenant
  - Manager Extension DN
- 2.3 Numbering Plan
  - OGM Playback / Record
- 3.6 OGM Group
  - FDN
  - Tenant No.
  - OGM Type

Features Guide References

1.3 System Features

- Outgoing Message (OGM) Group

1.5 Attended Features

- Direct Inward System Access (DISA)
- Uniform Call Distribution (UCD)

1.8 Ringing Features

- Timed Reminder (Wake-Up Call)
- Timed Reminder, Remote (Wake-Up Call)

User Manual References

- 4.4.6 Outgoing Message (OGM) Record/Playback

Outgoing Message (OGM) Group

Description

OGM resources on the DISA card can be grouped together as an OGM Group. Up to eight OGM Groups can be created in the system.

Conditions

- **Tenant Service**
  If Tenant Service is employed, the affiliation of OGM Group should be decided by System Programming.

Installation Manual References

- 2.6.1 DISA Card (KX-T96191)

Programming Guide References

- 1.7 DISA Port Assignment
- 3.6 OGM Group
  - FDN
  - Tenant No.
  - OGM Type
  - Security Mode
  - [DISA built-in Automated Attendant Tables] Dial 0 - Dial 9

Features Guide References

1.3 System Features

- Outgoing Message (OGM)

User Manual References

Not applicable.

Paralleled Telephone

Description

Any PT can be connected in parallel with an SLT.
The following two combinations of telephones are available:

a) APT + SLT (an Analog Proprietary Telephone and a Single Line Telephone / a single extension port)

b) DPT + SLT (a Digital Proprietary Telephone and a Single Line Telephone / a single extension port)

When a parallel connection is made, an extension user can make and answer a call using either one of two telephones.

Conditions

- **Hardware Requirements**
  DHLC card (KX-TD50170) or HLC card (KX-T96170) is required to utilize this feature.
- To enable Paralleled Telephone mode, set "Parallel / XDP" to "Parallel" in the Extension Port Assignment screen <Section "1.4 Extension Port Assignment" in the Programming Guide>.
- The corresponding PT user can activate or deactivate the paralleled SLT ringing by dialing the feature number for "Parallel telephone mode."
- Paralleled Telephones (APT+SLT / DPT+SLT) share the same extension number.
- **Extra Device Port (XDP)**
  If EXtra Device Port feature (DPT+SLT) is activated, each telephone has its own unique extension number and acts as completely different extensions.
- The PT can be used to perform normal operations whether or not the SLT is enabled.
- In the DPT + SLT combination, if one telephone goes off-hook while the other telephone is on a call, the call is switched to the former.
- In the APT + SLT combination, if one telephone goes off-hook while the other telephone is on a call, a 3-party call is established. If one user goes on-hook, the other user continues the call.
- **When receiving a call;**
  The SLT is activated; Both the PT and the SLT will ring except when the PT is in Hands-free Answerback mode or Voice Alerting mode.
  The SLT is deactivated; PT rings but the SLT does not ring.
- When the SLT is in operation, the display and LED indicator on the paired PT will work in the same way as if the PT is in operation.
- If APT + SLT are used, the extension user cannot originate a call from the SLT if the APT is:

  — playing BGM

  — in programming mode

  — receiving a paging announcement over the built-in speaker

- If DPT + SLT are used, the extension user cannot originate a call from the SLT if the DPT is:

  — in programming mode
- **Call Waiting Tone**
  Call Waiting tone rings at PT only.

Installation Manual References

- 2.4.12 Parallel Connection of the Extensions

Programming Guide References

- 1.4 Extension Port Assignment
  - Parallel / XDP (DHLC card)
  - Parallel / XDP (HLC card)

Features Guide References

1.1 System Expansion

- EXtra Device Port (XDP)

User Manual References

- 4.3.59 Paralleled Telephone Connection

Phantom Extension

Description

This allows the system to route the calls to a phantom extension. The call to a phantom extension arrives at the extension who has the corresponding Phantom button. One phantom extension number can be assigned to multiple extensions so that the caller can ring a group of extensions simultaneously.

- The lighting patterns and status of the Phantom button are shown below.

Lighting pattern	Phantom Extension Status
Off	Idle
Red on	Calling a phantom extension
Green rapid flash	Incoming call

Conditions

- A phantom button can be assigned to a flexible CO button by Station, User or System Programming.
- A phantom extension number must be assigned by System Programming before assigning the Phantom button.
- A maximum of 448 phantom extension numbers can be assigned. Each number has 3 to 4 digits, consisting of numbers **0 through 9**.
- Phantom extension number can be assigned to both PTs and SLTs.
- Types of calls whose destination can be the phantom extension are:

  Outside calls — DID; DID (ISDN); DIL 1:1; DISA; IRNA; Operator-Overflow; UCD-Overflow; TIE
  Intercom calls — Extension; Transfer
- The extension user can call the phantom extension by pressing the Phantom button or by dialing the phantom extension number. If several extensions have the same phantom extension number, they will ring simultaneously.
- The phantom extension number cannot be used for feature settings such as Call Forwarding.
- Phantom Extension ringing is programmable.

Programming Guide References

- 4.3 Extension Line
  - CO Key
- 5.3 Phantom Extension

Features Guide References

1.8 Ringing Features
- Log-In/Log-Out

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.10 Phantom Button Ringing On/Off Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.61 Phantom Extension

Released Link Operation

Description

When Released Link Operation is enabled, an extension user will be automatically released from a call (extension, outside) after transferring it to the destination, if the destination extension is idle. This feature simplifies the transfer operation by eliminating the need for going on-hook or pressing the RELEASE button after transferring the call.
This feature is convenient for extension users, such as Operators, who handle a large volume of calls.

Conditions

- **Class of Service**
  Class of Service programming determines the extension that can perform this feature.
- Released Link Operation functions when transferring a call to the ordinary extensions or floating extensions (extension group, incoming group, phantom extensions).
- If the destination party is busy, Camp-on Transfer is set by going on-hook.
- The SLT extension user cannot establish a conference call, if "Released Link Operation" is enabled by System Programming.

Programming Guide References

- 2.4 Class of Service (COS)
  - Released Link Operation

Features Guide References

1.11 Transferring Features
- Call Transfer

User Manual References

- 4.3.67 Released Link Operation

Remote Station Feature Control

Description

Allows both the Manager and the Operators to set and cancel the following features for other extensions.

Remote Station Lock Control
Used to lock other extensions so that no one can make an outside call or an intercom call (except an operator call) from those extensions.

Caller ID Log Lock Clear
Used to clear the Caller ID Log Lock Code set by an extension user.
This is convenient when an extension user cannot remember his own lock code.

LCS (Live Call Screening) Password Clear
Used to clear the password for LCS feature set by an extension user.
This is convenient when an extension user cannot remember his own password.

Remote DND (Do Not Disturb) Control
Used to set or cancel Do Not Disturb feature for other extensions.

Timed Reminder, Remote
Used to set, cancel and confirm the Timed Reminder feature for other extensions.

Remote FWD (Call Forwarding) Cancel-Once
Used to cancel the Call Forwarding feature set on an extension temporarily.

Switching COS (Class of Service)
Used to assign either primary or secondary level of COS for each extension.

Conditions

None

Programming Guide References

System Programming is not required.

Features Guide References

1.3 System Features
- Class of Service (COS)
- Manager Extension

1.5 Attended Features
- Caller ID Service

1.6 Originating Features
- Electronic Station Lockout

1.8 Ringing Features
- Do Not Disturb (DND)
- Timed Reminder, Remote (Wake-Up Call)

1.9 Answering Features

- Live Call Screening (LCS)

1.11 Transferring Features

- Call Forwarding

User Manual References

- 4.4.3 Call Log Incoming, Log Lock
- 4.4.4 Live Call Screening (LCS) Password Clear
- 4.4.7 Remote DND (Do Not Disturb) Control
- 4.4.8 Remote FWD (Call Forwarding) Cancel — Once
- 4.4.9 Remote Station Lock Control
- 4.4.10 Switching COS
- 4.4.11 Timed Reminder, Remote (Wake-Up Call)

Remote Station Lock Control

Description

Allows the Manager and the Operators to lock other extensions remotely, that is, from their own extensions.
Locked extensions cannot be used for making outside calls or intercom calls or both (except calls to the Operators and the emergency calls) depending on the setting.

Conditions

- **Electronic Station Lockout Override**
  "Remote Station Lock Control" overrides "Electronic Station Lockout." If Electronic Station Lockout has already been set by the extension user and Remote Station Lock is set by the Manager or an Operator, canceling the lock is only possible by the Manager or an Operator.

Programming Guide References

System Programming is not required.

Features Guide References

1.3 System Features
- Manager Extension
- Operator Group

1.6 Originating Features
- Electronic Station Lockout

User Manual References

- 4.3.30 Electronic Station Lockout
- 4.4.9 Remote Station Lock Control

Secret Dialing

Description

Used to conceal all or part of a registered telephone number that normally appears on the display.
Secret Dialing applies to the following features:

- One-Touch Dialing
- System Speed Dialing
- Station Speed Dialing (Special display features)

When a display PT user makes a call using a telephone number with Secret Dialing, all or part of the number does not appear on the display.

Conditions

- CO line access code must be placed before placing 's' or '['.
- One or more parts of a telephone number can be concealed.
- The concealed part will be printed out by SMDR.

Programming Guide References

- 5.2 System Speed Dialing

Features Guide References

1.7 Dialing Features
- One-Touch Dialing
- System Speed Dialing

1.17 Display Features
- Call Directory

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.70 Secret Dialing

Station Message Detail Recording (SMDR)

Description

Station Message Detail Recording (SMDR) automatically records detailed call information for CO calls. A printer connected to SIO #2 port of RS-232C on the basic shelf can be used to print incoming and outgoing CO calls. To print the call records, use the program "SMDR" which allows you to print out the following records:

- Record all outgoing CO calls or outgoing toll calls.
- Record all incoming CO calls.

Examples of a printed call record:

<Type-A> (default)

Date	Time	T	Ext	CO	Dial Number	Ring	Duration	Acct code	CC
02/02/00	03:01PM	1	E1001	T10101	1234567890123456789		00:00'14	1234567890	
02/02/00	03:13PM	1	E1001	T10101	<INCOMING>				RC
02/02/00	03:13PM	1	E1001	T10101	<INCOMING>	0'12			AN
02/02/00	03:13PM	1	E1001	T10101	<INCOMING>	0'12	00:00'1		
02/02/00	03:13PM	1	E1001		Timed Reminder / Start				
02/02/00	03:13PM	1	E1001		Timed Reminder / No Answer				
02/02/00	03:13PM	1	E1001		Timed Reminder / Answer				
02/02/00	03:47PM	1	E1001		Login				
02/02/00	03:47PM	1	E1001		Logout				
02/02/00	03:47PM	1	E1001		1002-Login				
02/02/00	03:47PM	1	E1001		* -Login				
02/02/00	03:47PM	1	E1001		1002-Logout				
02/02/00	03:47PM	1	E1001		* -Logout				
(1)	(2)	(3)	(4)	(5)	(7)	(8)	(9)	(11)	(12)

The SMDR is printed with the above format when "Type-A" is selected as Output Type by System Programming.

[Upper limit of digits / characters to be printed]

- Dial Number (7)— Outgoing Call: 19 digits
- Dial Number (7)— Caller ID Name: 16 characters
- Dial Number (7)— Caller ID Dial: 16 digits
- Ring (7): 9'59
- Acct code (10): 10 digits

<Type-B>

Date	Time	T	Ext	CO	Dial Number	Duration	Acct code	CC
15/02/00	06:42PM	1	E1009	T10801	12345678901234567890123 4	00:01'24	1234567890	
16/02/00	01:29PM	1	E1001	T10101	<INCOMING>			RC
16/02/00	01:29PM	1	E1001	T10101	<INCOMING>			AN
16/02/00	01:29PM	1	E1001	T10101	<INCOMING>	00:00'10		
02/02/00	03:13PM	1	E1001		Timed Reminder / Start			
02/02/00	03:13PM	1	E1001		Timed Reminder / No Answer			
02/02/00	03:13PM	1	E1001		Timed Reminder / Answer			
02/02/00	03:47PM	1	E1001		Login			
02/02/00	03:47PM	1	E1001		Logout			
02/02/00	03:47PM	1	E1001		1002-Login			
02/02/00	03:47PM	1	E1001		* -Login			
02/02/00	03:47PM	1	E1001		1002-Logout			
02/02/00	03:47PM	1	E1001		* -Logout			
•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•
(1)	(2)	(3)	(4)	(5)	(7)	(9)	(11)	(12)

The SMDR is printed with the above format when "Type-B" is selected as Output Type by System Programming.

[Upper limit of digits / characters to be printed]

- Dial Number (7)— Outgoing Call: 24 digits
- Dial Number (7)— Caller ID Name: 16 characters
- Dial Number (7)— Caller ID Dial: 21 digits
- Acct code (10): 10 digits

Example of SMDR printout format:

Explanation

1. Date: shows the date of the call in Month / Day / Year.

2. Time: shows the end time of a call in Hour / Minute / AM or PM.

3. T: Tenant No. (1-8)

4. Ext: shows the extension number, floating number, etc., which was engaged in the call.

5. CO: shows the CO line number used for making or receiving the call.

6. DN: shows the extension number of the PDN owner corresponding with the SDN button used to make an outside call. In this case, the extension number of the SDN is shown in the "4. Ext." column.

7. Dial Number
Outgoing call: shows the other party's telephone number. Valid digits are 0 through 9, ✳, #, P (if PAUSE button is pressed) or "=" (if a host PBX access code is entered).
Received call: shows <INCOMING>. If a Caller ID is assigned to the other party, it shows <I>, number or name.
Timed Reminder: shows the detailed Timed Reminder information when the Timed Reminder starts and it is answered or not answered.
Login / Logout:
<For Extension Group / Phantom Extension members>
shows the status of Login / Logout.
<For Incoming Group members>
shows the status of Group Login / Logout by specifying an Incoming Group with FDN or all Incoming Groups with ✳.

8. Ring: shows the ring duration of the incoming call in Minutes / Seconds.

9. Duration: shows the duration of the call in Hours / Minutes / Seconds.

10. Acct code (Account Code): shows the account code appended to the call.

11. CC (Condition Code): shows call handling type with the following codes:
TR: Transfer
FW: Call Forwarding to Trunk
D0: Non Security Trunk Access by a DISA caller
NN: DISA User Code No. (NN=01-32)
RM: Remote access to a modem
RC: Received an incoming call
AN: Answered an incoming call
NA: Not answered an incoming call
OR: COS Override
T0: TIE line access

Conditions

- When programmed for outgoing toll calls only, printing occurs only for calls which start with the numbers stored in any Denied Code Table from levels 2 to 6. In the ARS mode, the phone number modified by the ARS procedure will be printed out by SMDR.
- The KX-TD500 System can store up to 1000 call information data. If more than 1000 calls are originated or received, the oldest data is overwritten by the newest one.
- It is possible to select whether SMDR prints out the Caller ID and DID information by System Programming.
- It is possible to select whether or not the SMDR prints out received incoming calls (RC) and answered incoming calls (AN) information by System Programming.
- SMDR data is not deleted when you reset the system.
- If FLASH is manually sent out during a call, the call record is printed and a new record is started.
- If the calendar IC is out of order, "✳" will be printed out on "date" and "time" fields.

- SMDR (Station Message Detail Recording) records the detailed Timed Reminder information and prints it out automatically when the Timed Reminder starts and it is answered or not answered. This can be enabled or disabled by System Programming.
- It is possible to select whether or not SMDR prints out the Login / Logout status of Extension Group, Incoming Group members and Phantom extensions by System Programming.
- It is possible to select whether or not SMDR prints out the supplementary digits when the call is made using an ISDN line by System Programming. However, if the call is made using a memory dialing (Redial, One-Touch Dialing, etc.), SMDR prints out the supplementary digits regardless of this setting.

Installation Manual References

- 2.8.3 Personal Computer/Printer

Programming Guide References

- 2.5 System Timer
  - Call Duration Count Start Time
- 10.4 SMDR
  - SMDR Connection
  - Output Type
  - Print out Error Information
  - [Format] Page Length
  - [Format] Skip Perforation
  - [Duration Log] Outgoing Calls
  - [Duration Log] Incoming Calls
  - Print out Caller ID Information
  - Print out DID Information
  - Print out Incoming Call Start "RC" and Incoming Call Answer "AN" information
  - Print out Timed Reminder Information
  - Print out Account Code
  - Print out LOGIN / LOGOUT
  - Time Display Mode
  - Print out supplementary digits (ISDN only)
- 10.6 System Parameters
  - [Serial Interface Port] SMDR – Parity
  - [Serial Interface Port] SMDR – NL Code
  - [Serial Interface Port] SMDR – Word Length
  - [Serial Interface Port] SMDR – Stop Bit
  - [Serial Interface Port] SMDR – Baud Rate
- 10.7 System Time

Features Guide References

None

User Manual References

Not applicable.

System Data Default Set

Description

This system permits re-initialization of system-programmed data. Starting up the KX-TD500 system with default values can be done using the Operation Switch (MODE) on the CPU card <Section "2.10.2 CPU Rotary-Switch Features" in the Installation Manual>.

Conditions

- The default setting for each programming item is listed in Section "12 Default Values" in the Programming Guide.

Installation Manual References

- 2.10.2 CPU Rotary-Switch Features

Programming Guide References

System Programming is not required.

Features Guide References

None

User Manual References

Not applicable.

T1 Carrier

Description

The T1 line is at the bottom of the digital transmission hierarchy. A T1 line carries 1.544 Mbps of data (which can be voice or anything else). The T1 line contains 24 voice channels. Voice is digitized by Pulse Code Modulation.

Conditions

- **Hardware Requirements**
  T1 Digital Trunk card (KX-T96187) and user-supplied CSU (Channel Service Unit) are required to utilize T1 carrier with the KX-TD500 System.
- **Trunk Interface**
  This card supports five different trunk interfaces to provide desired connection at minimum expense. One of the following five trunk types can be assigned to one of 24 channels of T1 card individually according to tariffs and customer needs.
  LCO, GCO, DID, OPX, TIE (E&M)
- Up to eight T1 cards (192 ports) can be installed in the system. One T1 card occupies 24 trunk ports.
- The T1 card needs to be installed to free slot no.1, 5 or 9.
- Physical port number for each T1 trunk channel is as follows:

Slot No.	Channel	Port No.
1	1-24ch	X0101-X0124
5	1-24ch	X0501-X0524
9	1-24ch	X0901-X0924

X: Shelf No.(1=Basic, 2=Expansion 1, 3=Expansion 2)

- Extension Number Assignment is required when a channel of T1 card is assigned as "OPX."
- If your system is interfaced by T1 interface with another exchange, select the external clock mode by System Programming <Section "1.2.16 TSW card configuration" in the Programming Guide>.

Installation Manual References

- 2.5.4 T1 Digital Trunk Card (KX-T96187)

Programming Guide References

- 1.2 Slot Assignment
  - System Clock Status
  - Clock Configuration Mode
  - Clock Configuration Master Card No.
  - Clock Configuration Priority 1 - 8
- 1.6 T1 Port Assignment

Features Guide References

None

User Manual References

Not applicable.

Tenant Service

Description

The KX-TD500 System can be shared with up to **eight tenants**. When tenant service is utilized, each tenant can use the system resource differently and independently from other tenants. This enables the configuration of more than two systems which, in each case, are suited to different tenants.
Some system resources can be used in common and some can be divided among tenants.

Common Resources:

1. Absent Messages
2. AGC (Automatic Gain Control)
3. ARS Table
4. COS (Class of Service)
5. DID Dial Registration
6. Emergency Number
7. Incoming Group
8. Music Sources (MUS1, 2 on TSW card)
9. Numbering Plan
10. Phantom Extension
11. Quick Dialing
12. Remote Administration
13. SMDR (Station Message Detail Recording)
14. System Administration Terminal
15. Toll Restriction Tables

Resources which can be divided:

1. Account Code
2. Call Park Area
3. Caller ID Registration Table
4. Day / Night Switching Mode
5. Doorphone
6. Extension Group
7. External Pager
8. OGM (Outgoing Message) Group
9. Station Paging Group
10. System Speed Dialing
11. Trunk Group

Conditions

- The following features do not work between extensions if they do not belong to the same tenant.
  — Call Forwarding
  — Executive Busy Override — Barge-In
  — Executive Busy Override — Extension
  — Privacy Release

Note

- These restrictions apply even if "Inter-tenant Calling" <Section "2.2 Tenant" in the Programming Guide> is enabled between two tenants.

Programming Guide References

- 2.2 Tenant
- 3.2 Trunk Group
  - Tenant No.
- 3.3 Extension Group
  - Tenant No.
- 3.4 Paging Group
- 3.6 OGM Group
  - Tenant No.
- 4.5 Doorphone
  - Tenant No.
- 4.6 External Paging
  - Tenant No.
- 5.2 System Speed Dialing
  - Tenant No.
- 5.6 Account Code
  - Tenant No.
- 5.12 Caller ID Registration
  - Tenant No.

Features Guide References

None

User Manual References

Not applicable.

Time-Out, Variable

Description

Provides timers to control various features or functions.
The following timers are programmable:

System Data	Range
Hold Recall Time	0-240 s
Transfer Recall Time	0-48 rings
Pickup Dial Waiting Time	0-5 s
Call Duration Count Start Time	0-60 s
First Digit Time	5-120 s
Inter-digit Time	1-30 s
Intercept Time	1-48 rings
Call Forwarding - No Answer Time	1-12 rings
Extension-to-CO Line Call Duration Time	1-64 min
CO-to-CO Line Call Duration Time	1-64 min
Door Opener Timer	0-10 s
Timed Reminder Ringing Time	30-240 s
Call Parking Recall Time	0-1800 s
TIE Inter-digit Time	3-30 s
DISA Prolong Time	0-7 min
DISA Delayed Answer Time	0-6 rings
Timed Reminder Arrive Count	1-5 times
DISA Automated Attendant Time	1-5 s
DISA IRNA Time	5-240 s
Intercept Time after OGM	0 / 5 s
Auto Shut-off Time	3 / 5 s
Timed Reminder Arrive Wait Time	20-240 s
PRI Inter-digit Timer-1	1-30 s
PRI Inter-digit Timer-2	1-30 s
Dial counter for PRI Inter-digit Timer-2	0-24 digits

Trunk Group Data	Range
Disconnecting Time	0.5 / 1.5 / 2.0 / 4.0 / 12.0 s
Pause Time	1.5 / 2.5 / 3.5 / 4.5 s
Flash Time	None / 80 / 300 / 600 / 900 / 1200 ms
Pause Time before Flash Signal	None / 512 / 1024 / 1536 / 2048 ms

Extension Group Data	Range
Overflow Setting - Timer (for Operator)	None / 5-180 s

Incoming Group Data	Range
Ringing Type (for DIL 1:N)	Immediate / 1-ring Delay / 3-ring Delay / 6-ring Delay / No Ring
Overflow Setting - Timer (for Terminate / Operator / UCD)	None / 5 - 180 s

Trunk Data	Range
CPC Signal Detection Time (Outgoing / Incoming)	None / 6.5 / (2-75) $\times$ 8 ms
Wink Signal Time-out	None / 1-127 $\times$ 64 ms
Answer Wait Timer	None / 1 / 2 / 3 / 4 min

Extension Data	Range
Call Forwarding - No Answer Time	0-12 rings
Ringing Type (Flexible CO Key - PDN / SDN)	Immediate / 1-ring Delay / 3-ring Delay / 6-ring Delay / No Ring

Conditions

None

Programming Guide References

- 2.5 System Timer
- 3.2 Trunk Group
- 3.3 Extension Group
- 3.5 Incoming Group
- 4.2 Trunk Line
- 4.3 Extension Line

Features Guide References

None

User Manual References

Not applicable.

Trunk Busy-Out

Description

Allows the Manager and an Operator to busy out a CO line to prevent extension users from accessing it.

[The details of Trunk Busy-out feature]

There are the following two types of trunk port relay status which is set to Trunk Busy-out.

a) Busy (Loop Relay On): making the line busy by hardware

b) Idle (Loop Relay Off): making the line busy by software

The Central Office recognizes a trunk line as shown in the table "The Specification of Trunk Busy-out On."
The actual behavior of the PBX is as follows:

1. **Idle status**
   - **a)** When the PBX user makes a call:
     The trunk line is recognized as busy and making a CO call is disabled.
   - **b)** When the outside caller makes a call and then the Central Office gives the incoming call to PBX:
     The Central Office recognizes the PBX as idle and the call is processed. (The outside caller hears a ringback tone.) However, even though the PBX receives the bell signal from the Central Office, the PBX ignores it.
2. **Busy status (the status of grabbing a CO line) / during a conversation**
   - **a)** When the PBX user makes a call:
     The trunk line is recognized as busy and making a CO call is disabled.
   - **b)** When the outside caller makes a call and then the Central Office gives the incoming call to PBX:
     The Central Office recognizes the PBX as busy and the caller hears a busy tone.

Notes

- The default of each card is "Idle." If it were "busy," there is a possibility that the Central Office will mistakenly believe that there is something wrong with the trunk line.
- T1 standard does not have Busy-out Status (Block).
  Therefore, the default of all interfaces (Loop Start CO / Ground Start CO / DID / TIE) is regarded as idle status.

The Specification of Trunk Busy-out On

Card Type	The status of Trunk Busy-out set to "On"			Note
LCOT	Idle status (Default) Loop OFF	Busy status (the status of grabbing a CO line) Loop ON		
ELCOT	Idle status (Default) Loop OFF	Busy status (the status of grabbing a CO line) Loop ON		
GCOT	Idle status (Default) Loop OFF + Not connected to Ring FG	Busy status (the status of grabbing a CO line) Loop OFF + Connected to Ring FG	During a conversation Loop ON + Not connected to Ring FG	The busy status depends on the Central Office connected to the PBX.
DID	Idle status (Fixed)			The DID card is a card for only incoming call. It is assignable for Trunk Busy-out, but DID call comes in on even after the setup because the DC power (On / Off) to the Central Office from a DID card cannot be controlled.

The Specification of Trunk Busy-out On

Card Type		The status of Trunk Busy-out set to "On"			Note
T1	LCO	Idle status (Fixed)			
	GCO	Idle status (Fixed)			
	TIE				The behavior depends on the Start Signal Type. (System Programming) **1.** Immediate: the same as the usual idle status. **2.** Wink: When Wink Mode is selected by the PBX. When the Central Office processes an incoming call, it grabs a CO line to the PBX. But when the PBX busied out the trunk port, the PBX does not issue a wink signal. So the Central Office cannot complete the call. A reorder tone is returned to the caller. If the Central Office is a KX-TD500, the caller will see on hiss phone display, "CO Not Assigned."
	DID	Idle status (Fixed)			

Conditions

None

Programming Guide References

- 2.3 Numbering Plan
  - Trunk Busy-out
- 2.8 System Option
  - ELCOT / LCOT Busy-out Loop Relay
  - GCOT Busy-out Loop Relay

Features Guide References

None

User Manual References

- 4.4.12 Trunk Busy-Out Setting

Trunk Group

Description

All CO lines and TIE lines in the system can be grouped into up to 48 Trunk Groups. This allows extension users to call outside parties without designating a specific CO line, since a CO line is automatically selected from the designated Trunk Group. All CO lines belonging to a Trunk Group follow the assignment determined for that Trunk Group.

Conditions

- To support efficient utilization of trunks, it is desirable to group them together in trunk groups according to a type of each trunk (Incoming Only / Outgoing Only / Both-Way etc.) determined by the contract with the Central Office.
- Each CO line can only belong to one Trunk Group.
- **Line Hunting Order**
  An idle CO line in a trunk group is selected in one of the following three line hunting orders.
  a) Normal
  The system connects the user to an idle trunk line with the lowest trunk port physical number.
  b) Reverse (default)
  The system connects the user to an idle trunk line with the highest trunk port physical number.
  c) Sequential
  To avoid repeated use of the same trunk line, rotation is performed in numerical order (from the lowest to the highest trunk port physical number). Busy lines are skipped, of course.
- **Tenant Service**
  If Tenant Service is employed, the affiliation of each trunk group is determined by System Programming.

Programming Guide References

- 2.3 Numbering Plan
  - Trunk Group Access
- 2.4 Class of Service (COS)
  - Trunk Group Setting
- 2.7 Trunk to Trunk Restriction
- 3.2 Trunk Group
  - Intercept Destination – Day / Night
  - Pause Time before Flash Signal
  - Max. Dial No. after EFA Signal
  - Line Hunting Order
  - Tenant No.
  - Flash Time
  - Disconnecting Time
  - Pause Time
  - PBX Access Code
  - [Numbering Plan ID] Outgoing—Public
  - [Numbering Plan ID] Outgoing—Private
  - [Numbering Plan ID] Incoming—Public
  - [Numbering Plan ID] Incoming—Private
  - PBX Dial Tone
  - PBX Ringback Tone
  - [Type of Number] Outgoing—Public
  - [Type of Number] Outgoing—Private
  - [Type of Number] Incoming—Public
  - [Type of Number] Incoming—Private
  - Cyclic Signal Detection
  - Continuous Signal Detection
  - Silence Detection
  - ISDN Progress Tone Mode
  - IRNA for TIE Line

Features Guide References

1.6 Originating Features

- Trunk Access

User Manual References

Not applicable.

Trunk Route Control

Description

Allows the Manager and the Operators to make a call using a specific trunk.
They can verify the status of the specified trunk.

Conditions

- **Executive Busy Override**
  When the outside call made using a specific trunk is busy on another call, the Manager or the Operators can join the existing outside call by dialing "2" after hearing a busy tone. This feature is only available for the extension allowed by COS programming <Section 2.4 Class of Service (COS), "Busy Override" in the Programming Guide>.

Programming Guide References

- 2.3 Numbering Plan
  - Trunk Route Control
- 2.4 Class of Service (COS)
  - Busy Override

Features Guide References

1.6 Originating Features

- Executive Busy Override

User Manual References

- 4.4.13 Trunk Route Control

Walking Station

Description

Used to move an extension to a new location without re-programming. Extension data such as extension number, One-Touch dialing memory remain the same after the re-location of the extension.

Conditions

- The telephone type (PT, SLT, OPX) must be the same at the source and destination.
- Walking Station is not available in the following cases:
  – If the extension is connected to a DHLC card (KX-TD50170).
  – If the extension is connected to a HLC card (KX-T96170) in parallel.
  – If the extension is in hands-free mode.
- The status of the port must be INS (In-Service) at the source and destination.
- When the destination extension is in one of the following states, `Try Again` is shown on the display.
  – Off-hook, incoming call
  – Call Hold
  – All buttons on PT are in use
- When you reset the system during this process, the setting is canceled.

Programming Guide References

- 2.3 Numbering Plan
  – Walking Station

Features Guide References

None

User Manual References

- 4.3.85 Walking Station

1.4 Fault Recovery/Diagnostics

Local Alarm

Description

If a system error is detected during on-line communication mode, the Alarm light on the Manager extension turns red. An error message will be shown on the display PT of the Manager by pressing the red lit Alarm button.
If a major error occurs, minor errors will be neglected and only the first major error message will be displayed. The second error will be neglected, if the error priority is the same as the first one. Please refer to Section "5 Troubleshooting" in the Installation Manual for further information on error messages.

Error Message List (Priority order)

Error Message	Description	Priority	Alarm LED
ERR CLCK IC	Calendar IC failure	1	A
ERR DC DOWN	DC power down	1	B
B/S FAN FLT!	Basic shelf fan alarm	1	E
E/S1 FAN FLT!	Expansion shelf 1 fan alarm	1	E
E/S2 FAN FLT!	Expansion shelf 2 fan alarm	1	E
B/S OVER HEAT!	Basic shelf heat alarm	1	E
E/S1 OVER HEAT!	Expansion shelf 1 heat alarm	1	E
E/S2 OVER HEAT!	Expansion shelf 2 heat alarm	1	E
ERR TSW DWN	TSW clock down	1	B
ERR BAT ALM	CPU RAM battery alarm	1	A
ERR AC DOWN	AC power down	2	B
ERR xyy CRD ERR	Option Card failure	2	A
ERR xyy DISCNCT	Card disconnect	2	B
ERR xyy DTR AIS	Digital trunk AIS reception	2	D*1
ERR xyy DTR FRM	Digital trunk frame failure	2	D*1
ERR xyy DTR RAI	Digital trunk RAI reception	2	D*1
ERR xyy DTR SYC	Digital trunk out of synchronization	2	D*1
ERR xyy LPR RAM	Option Card RAM failure	2	A
ERR xyy LPR ROM	Option Card ROM failure	2	A
ERR xyyz MODEM	Modem failure	2	A

Error Message List (Priority order)

Error Message	Description	Priority	Alarm LED
ERR xyy OGM LOS	DISA OGM is lost	2	C
ERR xyy OPX POW	OPX power failure	2	C
ERR SMDR	Printer is not connected	2	B
ERR xyy DSP1LNK	DSP-1 link failure	2	D*1
ERR xyy CD FLT	Card status fault	2	A

*1 Regarding the T1 card, please refer to Reference Guide for T1 Digital Trunk card.

[Legend]
Error Message

x: Shelf Number (1-3)

yy: Slot Number (01-14)

z: Error Number

Priority

1: Major Error

2: Minor Error

Alarm LED
(When a problem occurs)

A: LED on PT / Top Shelf / Card.....OFF → ON

B: LED on PT / Top Shelf.....OFF → ON

C: LED on PT.....OFF → ON

D: LED on PT / Card.....OFF → ON

The Alarm light turns red automatically. The corresponding error message is shown on the display PT, if it is idle, by pressing the red lit Alarm button.
If the red lit Alarm button is pressed again, whether the problem is solved or not, the Alarm light goes off and the display PT shows the initial display ("Date" and "Time" or "Self-Extension number").

E: LED on PT / Top Shelf.....OFF → ON

The Alarm light turns red and the corresponding error message is shown on the display PT automatically, if it is idle. This situation continues until the problem will be solved.

(When the problem is solved)

A/B/C/D: LED on PT.....ON (no change)
LED on Top Shelf / Card.....ON → OFF

E: LED on PT / Top Shelf.....ON → OFF

When the problem is solved, the Alarm light goes off and the display PT shows the initial display.

Conditions

- **Alarm button assignment**
  Alarm button can be assigned to a flexible CO button on PT by Station, User or System Programming.
- **Alarm LED indication**
  Major alarm (Priority 1) - Red moderate flash
  Minor alarm (Priority 2) - Red On
- If multiple errors occur at a time, only the error with highest priority will be displayed by pressing the red lit Alarm button.

Programming Guide References

- 2.2 Tenant
  - Manager Extension DN
- 4.3 Extension Line
  - CO Key

Features Guide References

None

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.4.5 Local Alarm

Power Failure Re-Start

Description

When turning back on the electricity, the system re-starts the stored data automatically. Before re-starting, the system records the error log if necessary.

Conditions

- **Memory Protection**
  In the event of a power failure, system memory is protected by a factory-provided lithium battery.

Programming Guide References

System Programming is not required.

Features Guide References

1.4 Fault Recovery/Diagnostics
- Power Failure Transfer

User Manual References

Not applicable.

Power Failure Transfer

Description

Power Failure Transfer connects specific telephones (any SLT) to the pre-determined CO lines in the event of system power failure.

Conditions

- Up to 192 pairs of extension / CO connection are available to maintain a conversation when power is restored or TSW is recovering.
- Auxiliary Connection between the Trunk card and the Extension card should be done as per System Programming so that conversation is maintained when the power is restored or TSW is recovering.
- KX-TD500 System changes the current connection to the Auxiliary connection automatically when the power supply stops.
- **DC Power Source**
  If DC power is available by the backup batteries even if the AC power fails, the KX-TD500 System will not change the current connection to the Auxiliary connection.

Installation Manual References

- 2.4 Extension Cards
- 2.5 Trunk Cards
- 2.9.1 Auxiliary Connection for Power Failure Transfer

Programming Guide References

- 10.5 Power Failure Transfer

Features Guide References

1.4 Fault Recovery/Diagnostics
- Power Failure Re-Start

User Manual References

Not applicable.

1.5 Attended Features

Caller ID Service

Description

Provides the display PT user with a caller's information, such as name and telephone number, sent from the Central Office over the CO line assigned to receive Caller ID service calls.

Conditions

- A special arrangement is required with the telephone company to utilize the Caller ID Service.
- **Hardware Requirements**
  To utilize this feature, ELCOT card (KX-TD50180) and Caller ID card (KX-TD193) are required.
- **Caller ID Number and Name Registration**
  Up to 1000 entries of number and name for Caller ID Service can be programmed either by User or System Programming.
- **Tenant Service**
  If "Tenant Service" is employed, up to 2000 entries of number and name for Caller ID Service can be shared among each tenant under the condition of up to 1000 entries per tenant.
- If neither the telephone number nor the name is stored in the Caller ID Table, the number sent from Caller ID service is displayed.
- If the network provides a telephone number only, the system searches for the matching name for the number from the Caller ID Table and displays both of them.
- **Call Log, Incoming**
  A Caller ID information is recorded in the Call Log of a display DPT (KX-T7230, KX-T7235, KX-T7433, KX-T7436) either automatically or manually.
- A display PT with one-line readout (KX-T7431 and display APTs) will show either the name or the number at a time. To alternate the display, press the ✳ key.
- **Initial Display Selection**
  If Caller ID is available, the initial display (Caller ID, DID Name or CO Line Name) is determined either by Station or System Programming. Caller ID Detection is set by System Programming <Section 1.2.6 Card Properties (ELCOT) – Caller ID, "Caller ID Detection" in the Programming Guide>.
  CO Line Name can be changed by System Programming <Section 4.2 Trunk Line, "Name" in the Programming Guide>.
- **Display Selection While Receiving Caller ID**
  While receiving Caller ID, the extension user can alternate the display (Caller ID, DID Name or CO Line Name) by pressing the SHIFT or "✳" button.
- **Caller ID or Call Duration**
  During a call, the extension user can alternate the display (Caller ID or Duration) by pressing the "INFO" or FWD/DND button.

Installation Manual References

- 2.5.5 ELCOT Card (KX-TD50180)
- 2.7.4 Caller ID Card (KX-TD193)

Programming Guide References

- 1.2 Slot Assignment
  - Caller ID Detection
- 2.8 System Option
  - Automatic adjustment of the clock using Caller ID information
  - LCD Display Mode while CO talking
- 4.2 Trunk Line
  - Name
- 4.3 Extension Line
  - Initial Display Selection
  - [Call Log Incoming] Overwrite Mode
  - [Call Log Incoming] Lock Password
- 5.11 Caller ID Modification
  - [Local Call] Area Code
  - [Local Call] Digits to delete
  - [Local Call] Number to be added
  - [Long Distance Call] Digits to delete
  - [Long Distance Call] Number to be added
- 5.12 Caller ID Registration
- 10.4 SMDR
  - Print out Caller ID Information

Features Guide References

1.17 Display Features

- Call Log, Incoming
- Display, Call Information

User Manual References

- 2.2.6 Initial Display Selection
- 3.2.6 [006] Caller ID Dial Set
- 3.2.7 [007] Caller ID Name Set
- 4.5.3 Call Information Display (KX-T7436 / KX-T7433 / KX-T7235 / KX-T7230 only)
- 4.5.4 Call Log, Incoming (KX-T7436 / KX-T7433 / KX-T7235 / KX-T7230 only)

Caller ID Service on T1 Line

Description

Provides the display PT user with a caller's information, such as telephone number (max. 24 digits), sent from the T1 Central Office over the CO line assigned to receive Caller ID service calls.

Conditions

- A special arrangement is required with the telephone company to utilize the Caller ID Service.
- **Caller ID Number and Name Registration**
  Up to 1000 entries of number and name for Caller ID Service can be programmed either by User or System Programming.
- **Tenant Service**
  If "Tenant Service" is employed, up to 2000 entries of number and name for Caller ID Service can be shared among each tenant under the condition of up to 1000 entries per tenant.
- If neither the telephone number nor the name is stored in the Caller ID Table, the number sent from Caller ID service is displayed.
- If the network provides a telephone number only, the system searches for the matching name for the number from the Caller ID Table and displays both of them.
- **Call Log, Incoming**
  A Caller ID information is recorded in the Call Log of a display DPT (KX-T7230, KX-T7235, KX-T7433, KX-T7436) either automatically or manually.
- A display PT with one-line readout (KX-T7431 and display APTs) will show either the name or the number at a time. To alternate the display, press the ⚹ key.
- **Initial Display Selection**
  If Caller ID is available, the initial display (Caller ID, DID Name or CO Line Name) is determined either by Station or System Programming. Caller ID Detection is set by System Programming <Section 4.2 Trunk Line, "Caller ID" in the Programming Guide>.
  CO Line Name can be changed by System Programming <Section 4.2 Trunk Line, "Name" in the Programming Guide>.
- **Display Selection While Receiving Caller ID**
  While receiving Caller ID, the extension user can alternate the display (Caller ID, DID Name or CO Line Name) by pressing the SHIFT or "⚹" button.
- **Caller ID or Call Duration**
  During a call, the extension user can alternate the display (Caller ID or Duration) by pressing the "INFO" or FWD/DND button.
- This feature is available when the Caller ID is assigned to "Enable." In addition, a channel of T1 card must be assigned as "DID" or a channel of T1 card must be assigned as "TIE(E&M)" and the incoming type must be assigned as "DIL" by System Programming.

Installation Manual References

- 2.5.4 T1 Digital Trunk Card (KX-T96187)

Programming Guide References

- 1.6 T1 Port Assignment
  - Channel Type
- 4.2 Trunk Line
  - Incoming Type
  - Name
  - Caller ID
- 4.3 Extension Line
  - Initial Display Selection
  - [Call Log Incoming] Overwrite Mode
  - [Call Log Incoming] Lock Password
- 5.11 Caller ID Modification
  - [Local Call] Area Code
  - [Local Call] Digits to delete
  - [Local Call] Number to be added
  - [Long Distance Call] Digits to delete
  - [Long Distance Call] Number to be added
- 5.12 Caller ID Registration
- 10.4 SMDR
  - Print out Caller ID Information

Features Guide References

1.17 Display Features

- Call Log, Incoming
- Display, Call Information

User Manual References

- 2.2.6 Initial Display Selection
- 3.2.6 [006] Caller ID Dial Set
- 3.2.7 [007] Caller ID Name Set
- 4.5.3 Call Information Display (KX-T7436 / KX-T7433 / KX-T7235 / KX-T7230 only)
- 4.5.4 Call Log, Incoming (KX-T7436 / KX-T7433 / KX-T7235 / KX-T7230 only)

Direct In Lines (DIL)

Description

Enables an incoming CO call to go directly to one or more answering points without assistance of the operator.

Assignable destinations are:

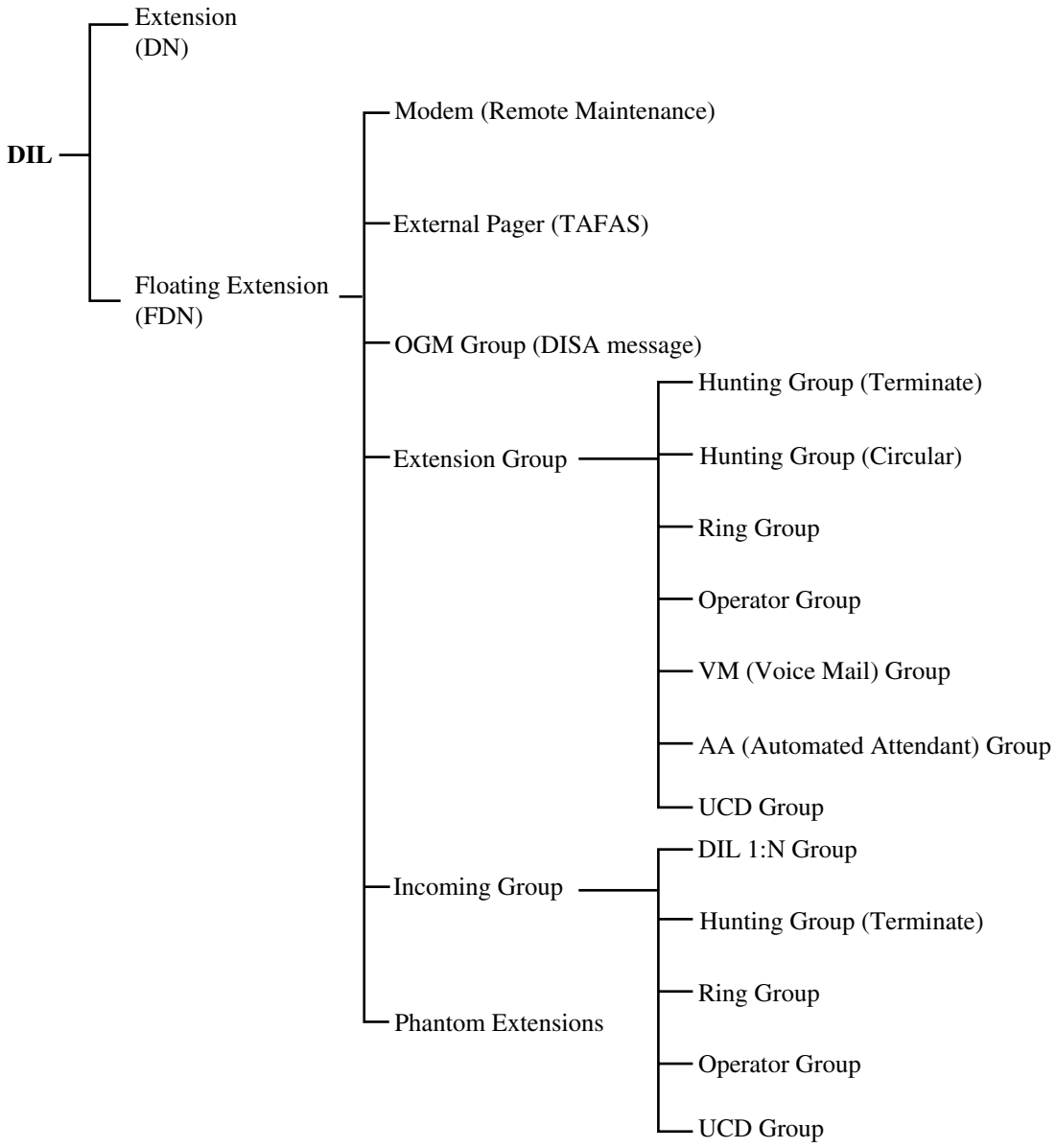
(1) Extension

(2) Floating Extension

- — Modem (Remote Administration)
- — External Pager (TAFAS)
- — OGM Group (DISA message)
- — Extension Group
- — Incoming Group
- — Phantom Extension

DIL can have different destinations for day/night/lunch/break modes (Night Service).

Outline sketch of Direct In Lines (DIL)



Conditions

- DIL to the modem allows the caller to perform remote administration. When receiving incoming calls (TAFAS feature), DIL pages an external pager. DIL to DISA message allows an external caller to access the system directly (DISA feature).

Programming Guide References

- 4.2 Trunk Line
  - Incoming Type
  - Destination—Day/Night/Lunch/Break

Features Guide References

None

User Manual References

Not applicable.

Direct Inward Dialing (DID)

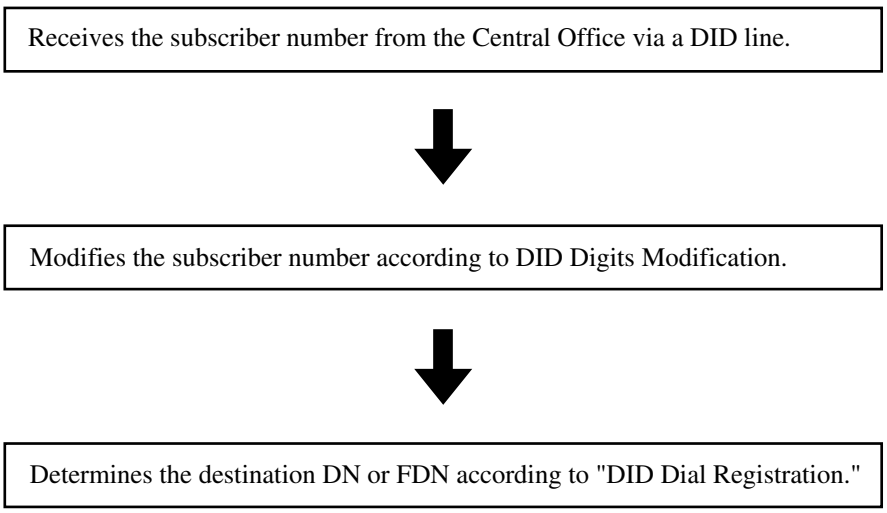
Description

Allows incoming CO calls to reach a specific extension, a virtual extension or a group of extensions in the system directly in accordance with the subscriber number sent from the Central Office.

Possible destination of DID calls

- Extension user
- Extension Group
- External Pager (TAFAS)
- Incoming Group
- Modem (Remote Administration)
- OGM Group (DISA message)
- Phantom extension
- Other PBX extension

Call Flow


Receives the subscriber number from the Central Office via a DID line.
Modifies the subscriber number according to DID Digits Modification.
Determines the destination DN or FDN according to "DID Dial Registration."

DID Digits Modification Procedures

The System modifies the subscriber number according to the following three parameters.

1. **Digit to receive DID**
   The number of digits effective in the received subscriber number.
2. **Digits to delete**
   The number of digits to be deleted from the beginning of the digits processed in Step 1.
3. **Number to be added**
   The dials to be inserted at the beginning of the digits processed in Step 2.

[Example]
Digit to receive DID: 4 (digits)
Digits to delete: 1 (digit)
Number to be added: 2

The System modifies the received subscriber number "4311" into "2311" as follows:

Processed in Step 2: 4311 → 311
The first digit "4" was deleted. This results in "311."

Processed in Step 3: 311 → 2311
The digit "2" was added to the beginning of "311." This results in "2311."

DID Dial Registration

The System converts the modified number into the destination DN or FDN according to this table.

[Example]
The System searches for the number "2311" in the table. When matching is found, the call rings the corresponding extension or floating station.

DID / MDN No. (Max. 16 digits)	Destination (Day)	Destination (Night)	Name (Max. 10 characters)
2311	200	300	PANASONIC

Conditions

- **Hardware Requirements**
  To utilize the DID feature, DID card (KX-T96182) or T1 Digital Trunk card (KX-T96187) is required.
- **Incoming only – DID card (KX-T96182)**
  DID trunk is used for receiving DID calls only. If the extension user attempts to make a call using a DID trunk (incoming only), the system sends a reorder tone.
- **Both way – T1 Digital Trunk card (KX-T96187)**
  DID trunk is used for both receiving DID calls and making outside calls.
- A maximum number of digits to be received by DID/T1 card is limited to 7 digits.
- **What if the dialing digits received is not enough to decide the call destination?**
  If the number of digits received is less than the number which is programmed in "Digit to receive DID," a reorder tone is sent to the caller, or the call is redirected to the IRNA destination (IRNA feature). This is determined by System Programming <Section 2.8 System Option, "22. Illegal Number - DID" in the Programming Guide>.
- **What if the call destination is not registered?**
  If the received number has no corresponding destinations, a reorder tone is sent to the caller, or the call is redirected to the IRNA destination (IRNA feature). This is determined by System Programming <Section 2.8 System Option, "22. Illegal Number - DID" in the Programming Guide>.
- **What if the call destination is busy?**
  If the destination of a DID call is in busy status, the caller may hear a busy tone or the call is redirected to the IRNA destination or the call waits until the destination becomes idle.

This is determined by System Programming <Section 2.8 System Option, "18. Destination Busy - DID" in the Programming Guide>.

- The tenant number and VPS trunk group number can be assigned in the DID table so that the system is shared with tenants on a DID No. basis. It is programmable whether to enable or disable the tenant assigned on a DID No. basis by System Programming <Section 2.8 System Option, "VM Trunk Service for DID " in the Programming Guide>.
- Tenant number is used to determine the time mode (day / night) for the corresponding DID number. VPS trunk group number is used in DPT Integration.

Installation Manual References

- 2.5.3 DID Card (KX-T96182)
- 2.5.4 T1 Digital Trunk Card (KX-T96187)

Programming Guide References

- 1.3 Trunk Port Assignment
  - Group No.
- 1.6 T1 Port Assignment
  - Channel Type
  - Group No.
- 2.8 System Option
  - Destination Busy - DID
  - Illegal Number - DID
  - VM Trunk Service for DID
- 3.2 Trunk Group
  - Intercept Destination – Day / Night
- 4.2 Trunk Line
  - Group No.
  - Incoming Type
  - [DID/TIE] Digits to delete
  - [DID/TIE] Number to be added
  - Digit to receive DID
  - Start Signal Type
- 4.3 Extension Line
  - Intercept Destination — Day / Night
- 9.2 DID Dial Registration
  - DID/MDN No.
  - Tenant No.
  - VPS Trunk Group No.
  - Destination – Day/Night
  - Name

Features Guide References

1.3 System Features

- Floating Station

1.17 Display Features

- Display, Call Information

User Manual References

Not applicable.

Direct Inward System Access (DISA)

Description

Allows an outside caller to access specific system features without operator assistance as if the caller is an extension user in the system.
The outside caller can have direct access to features such as:

- **Placing an intercom call** to an extension, modem (for remote administration), external pager (for TAFAS), Phantom extension, Extension Group or Incoming Group (except DIL 1:N Group).
  DISA built-in Automated Attendant
  A DISA caller can access the desired extension simply by dialing a one-digit code.
- **Calling an outside party.**

To control the DISA caller's calling ability, one of the following three Security modes can be assigned on an OGM Group basis.

Security Mode	Description
Non Security	DISA callers can make both outside and intercom calls without restriction.
Trunk Security	DISA callers are required to enter a pre-assigned DISA user code to make outside calls.
All Security	DISA callers are required to enter a pre-assigned DISA user code to make both outside and intercom calls.

Outgoing Message (OGM) can be recorded for the DISA feature. When a caller reaches the system via DISA line, a pre-recorded message will greet the caller. DISA OGMs may be recorded by the Manager extension or an Operator.

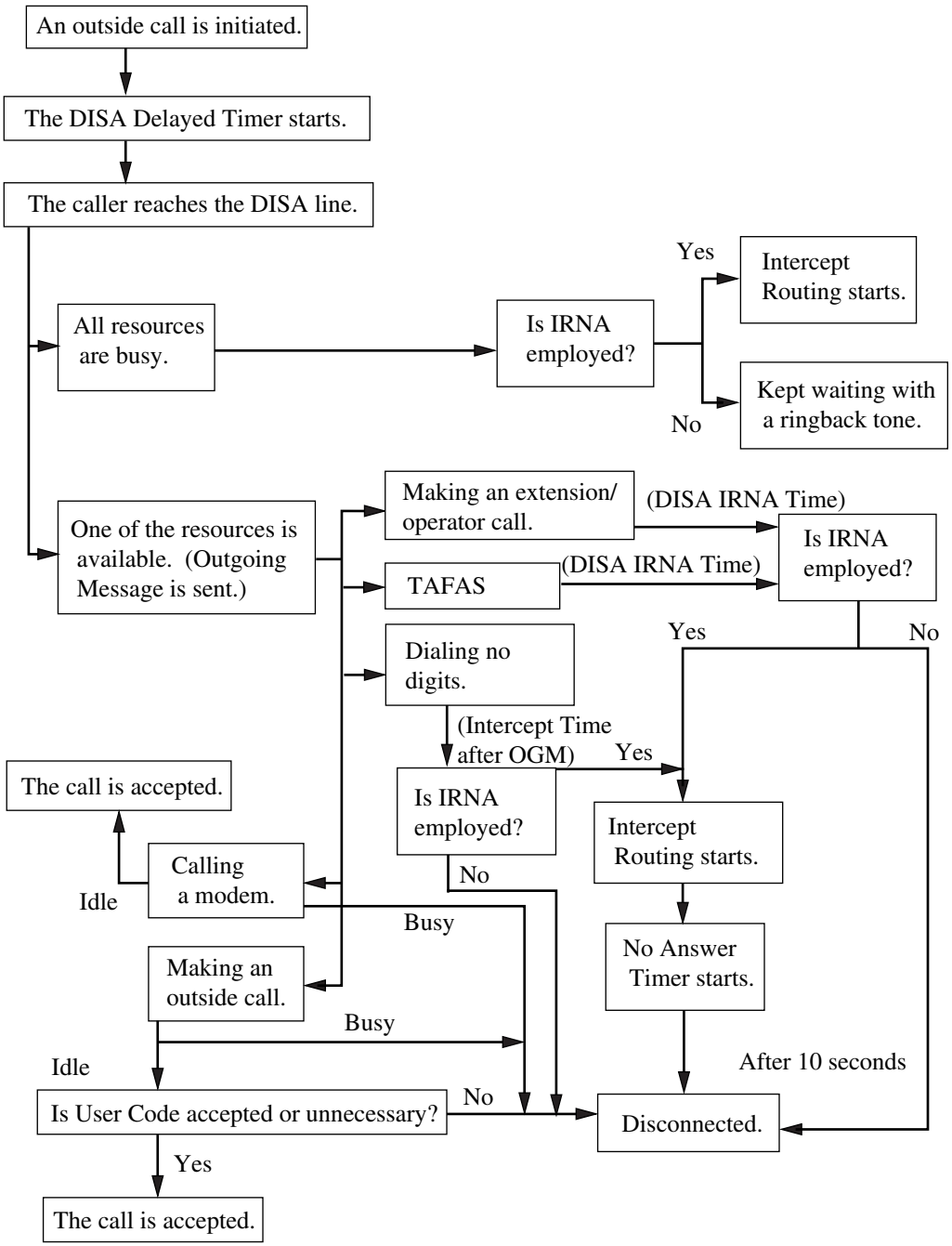
Warning for the Direct Inward System Access Users

When you enable the CO-to-CO Line Call feature of **Direct Inward System Access (DISA) function**, if a third party discovers the password (a DISA User Code) of the system, you have a risk that they will make illegal phone calls using your telephone line, and the cost may be charged to your account.

In order to avoid this problem, we strongly recommend the following points:

1: Carefully maintain the secrecy of the password.
2: Specify a complicated password as long and random as you can make it.
3: Change the password frequently.

Flow chart of possible cases and results for DISA calls



Conditions

- The following items are required to utilize the DISA feature:
  a) An optional DISA Card (KX-T96191) must be installed.
  Up to eight DISA cards can be installed in the system.
  b) The FDN of the OGM Group number should be assigned as the DIL 1:1 destination.
  This assigns the DISA line and the message accessed by external callers.

c) The DISA OGM(s) should be recorded by the Manager or an Operator.

d) The OGM Type should be set to "DISA" under OGM Group setting.

- **DISA Delayed Answer Time**
  A DISA call is answered after a ringback tone is returned to the caller after the "DISA Delayed Answer Time" expires. The caller can dial while hearing the OGM message.
- **DISA User Code**
  This system can store up to 32 programmable DISA user codes with a COS (Class of Service) level for each. Each code should be unique.
- **DISA User Code Entry Failure**
  If the DISA caller fails to enter the valid DISA user code three times consecutively, the call will be disconnected.
- **DISA built-in Automated Attendant Table**
  This system can store up to 8 DISA built-in auto attendant number tables, each having 10 one-digit numbers.
- **DISA built-in Automated Attendant Number**
  The DISA built-in auto attendant number may be the same as the first digit of other numbers (extension number, Floating Number, etc.). To avoid confusion, the system waits for the second digit for a pre-programmed amount of time (default: 1 second). If the second digit is not dialed before the timer expires, the system assumes that the first digit is a DISA built-in auto attendant number.
- **Call Forwarding - to CO or TIE Line**
  When a DISA call is forwarded to an outside party, the caller is not required to enter a DISA user code regardless of the Security modes.
- **CO-to-CO line call duration**
  The duration of CO-to-CO line calls can be limited by System Programming. When a specified period of time (default:10 min) expires, both lines are disconnected unless the caller prolongs the duration time, if available. A warning tone is sent to both parties 15 seconds before the time limit at 5-second intervals.
- Prolonging the duration of CO-to-CO line call is possible. To prolong the call duration, the caller should press any dialpad key except ✳. The amount of prolonging is set by "DISA Prolong Time" (0 to 7 minutes). (If this is set to zero, then prolonging is disabled.) Depending on System Programming <Section 2.8 System Option, "13. DISA prolong operation" in the Programming Guide>, the call duration can be prolonged 10 times or without limit.
- To detect the end of a CO-to-CO line call, CPC Signal Detection and Tone Detection can be assigned.
- **Tone Detection**
  The following three ways of "Tone Detection" are provided <Section "3.2 Trunk Group" in the Programming Guide> to disconnect a CO-to-CO line call.
  1. Cyclic Signal Detection:
     Used to disconnect the trunk line when the system detects a cyclic signal during a CO-to-CO line call by DISA or AGC.
  2. Continuous Signal Detection:
     Used to disconnect the trunk line when the system detects a continuous signal during a CO-to-CO line call by DISA or AGC.

3. Silence Detection:
   Used to disconnect the trunk line when the system detects no signal during a CO-to-CO line call by DISA or AGC.

- **DISA Call Re-try by Pressing ✳**
  The "✳" key can be entered during a DISA call. The action taken by the system depends upon System Programming <Section 2.8 System Option, "14. Dialing "✳" in DISA CO-to-CO talking" in the Programming Guide>.
  If "Disconnect and make a new call" is selected, then the system will disconnect the current call and prepare for a new call. Otherwise, the ✳ will be transmitted down the line to the other party.
- **Intercept Routing**
  The Floating Number of a DISA OGM Group may be selected as the destination of Intercept Routing.
- **What if the destination is busy?**
  If the destination has enabled Call Waiting, then he will hear the Call Waiting tone. Otherwise, the caller may hear a busy tone, or the call is redirected to the IRNA destination. This is determined by System Programming <Section 2.8 System Option, "17. Destination Busy - DISA" in the Programming Guide>.
- **What if an illegal number is dialed?**
  The caller may hear a reorder tone, or the call is redirected to the IRNA destination. This is determined by System Programming <Section 2.8 System Option, "21. Illegal Number - DISA" in the Programming Guide>.
- **How many times does the IRNA destination ring?**
  This is determined by System Programming <Section 2.5 System Timer, "Call Forwarding - No Answer Time" in the Programming Guide>.
- When all resources on the DISA card are busy, a maximum of 12 calls are put in waiting status until DISA IRNA Time expires. If the DISA resource remains busy, the call is redirected to the IRNA destination. If the IRNA destination is not programmed, the call waits until the DISA resource becomes idle.
  If the 13th or later call comes in on the DISA resource, it is redirected to the IRNA destination immediately. If the IRNA destination is not programmed, the call is kept waiting with a ringback tone.

Installation Manual References

- 2.6.1 DISA Card (KX-T96191)
- 2.6.3 RMT Card (KX-T96196)
- 2.6.4 ERMT Card (KX-TD50197)

Programming Guide References

- 1.7 DISA Port Assignment
- 2.3 Numbering Plan
  - OGM Playback / Record
- 2.4 Class of Service (COS)
  - TRS Level – Day / Night
- 2.5 System Timer
  - Call Forwarding-No Answer Time
  - CO-to-CO Line Call Duration Time
  - DISA Prolong Time
  - DISA Delayed Answer Time
  - DISA Automated Attendant Time
  - DISA IRNA Time
  - Intercept Timer after OGM
- 2.7 Trunk to Trunk Restriction
- 2.8 System Option
  - DISA prolong operation
  - Dialing "*" in DISA CO-to-CO talking
  - Destination Busy - DISA
  - Illegal Number - DISA
- 3.2 Trunk Group
  - Intercept Destination – Day / Night
  - Cyclic Signal Detection
  - Continuous Signal Detection
  - Silence Detection
- 3.6 OGM Group
  - FDN
  - Tenant No.
  - OGM Type
  - Security Mode
  - [DISA built-in Automated Attendant Tables] Dial 0 - Dial 9
- 4.2 Trunk Line
  - Incoming Type
  - Destination—Day/Night/Lunch/Break
  - [CPC Signal] OUT Detection
  - [CPC Signal] OUT Detection—Detection Time
  - [CPC Signal] IN Detection
  - [CPC Signal] IN Detection—Detection Time
- 4.3 Extension Line
  - Intercept Destination — Day / Night
- 5.9 DISA/TIE User Code
  - Code
  - COS

Features Guide References

1.3 System Features

- Outgoing Message (OGM)

1.11 Transferring Features

- Intercept Routing

User Manual References

- 3.2.10 [010] DISA / TIE User Code Set
- 4.3.26 Direct Inward System Access (DISA)
- 4.4.6 Outgoing Message (OGM) Record/Playback

Ring Group

Description

Allows both extension and outside users to ring all extensions in a Ring Group simultaneously by dialing the Floating Directory Number (FDN) of the Ring Group.
This feature is useful for talking to or transferring calls to anyone in the same group.

This feature can be categorized as follows:

Extension Group
Ring Group can be made up by assigning the group type of an Extension Group as "Ring." Up to 128 Ring Groups, each consisting of more than one extension in the same tenant, can be created in the system.

Incoming Group
Ring Group can be made up by assigning the group type of an Incoming Group as "Ring." Up to 96 Ring Groups can be created in the system.

Conditions

- Types of calls whose destination can be the Ring Group are:

Call Type	
Outside calls	Direct In Line (DIL); Direct Inward Dialing (DID); Direct Inward Dialing (DID) (ISDN); Direct Inward System Access (DISA); Intercept Routing – No Answer (IRNA); Multiple Directory Number (MDN); TIE; Uniform Call Distribution (UCD)-Overflow
Intercom calls	Extension; Transfer

Programming Guide References

- 1.4 Extension Port Assignment
  - Group No.
- 2.3 Numbering Plan
  - Login / Logout
  - Group Login / Logout
- 3.3 Extension Group
  - FDN
  - Tenant No.
  - Group Type
- 3.5 Incoming Group
  - FDN
  - Group Type
- 4.2 Trunk Line
  - Destination—Day/Night/Lunch/Break
- 4.3 Extension Line
  - Group No.
- 4.7 ISDN Extension Line
  - End (Day)

Features Guide References

1.3 System Features

- Extension Group
- Incoming Group
- Floating Station

User Manual References

Not applicable.

Trunk Answer From Any Station (TAFAS)

Description

A tone signal is emitted from the external pager when an incoming CO call is received. Any extension user can answer the call.

Conditions

- **Hardware Requirements**
  A user-supplied external paging device is required to utilize this feature. Up to two external pagers can be installed in the system.
- To answer an incoming CO call ringing at an external pager, dial the feature number and TAFAS number 1 or 2. The feature number is the same as that used to answer Paging — External.
- TAFAS can be used in the following cases:
  a) The FDN of an external pager is assigned as the Destination of a trunk line (DIL 1:1). In this case, all incoming calls on the specified line will be signaled.
  b) A DISA caller dials the FDN of an external pager.
  c) The FDN of an external pager is assigned as the Intercept Routing destination. In this case incoming calls redirected to the destination will be signaled.
  d) When a TIE call comes in.
- **Confirmation Tone**
  A confirmation tone is sent to the extension user before being connected to the caller. Eliminating the tone is programmable <Section 2.8 System Option, "9. Confirmation tone for Call Pickup, Paging, Paging-Answer, TAFAS-Answer, Hold Retrieve and Call Park Retrieve" in the Programming Guide>.

Installation Manual References

- 2.8.1 External Pager (Paging Equipment)

Programming Guide References

- 2.3 Numbering Plan
  - External Paging Answer / TAFAS Answer
- 2.8 System Option
  - Confirmation tone for Call Pickup, Paging, Paging- Answer, TAFAS-Answer, Hold Retrieve and Call Park Retrieve
- 4.2 Trunk Line
  - Incoming Type
  - Destination—Day/Night/Lunch/Break
- 4.6 External Paging
  - Tenant No.
  - FDN

Features Guide References

1.3 System Features

- Floating Station

User Manual References

- 4.3.78 Trunk Answer From Any Station (TAFAS)

Uniform Call Distribution (UCD)

Description

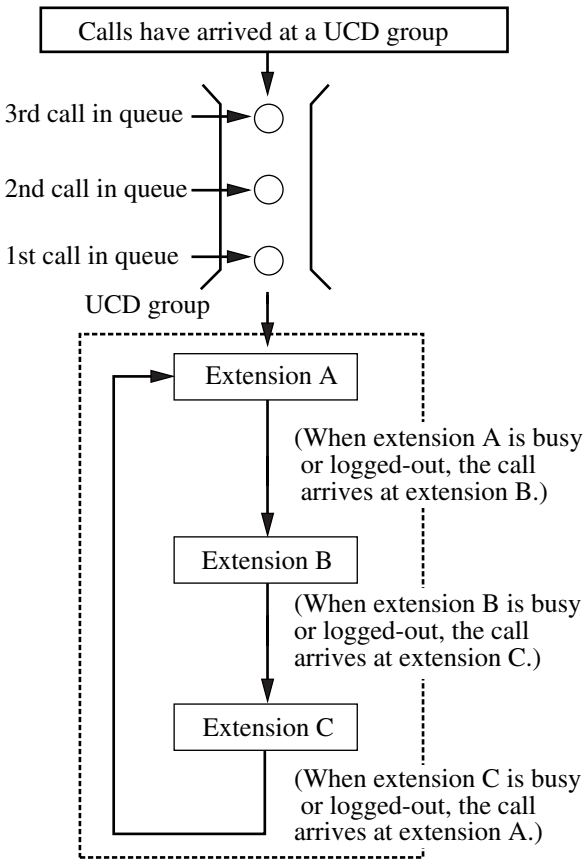
Calls to a UCD group are distributed uniformly among the group members so that each member can share the same load.
This UCD feature is particularly helpful when a certain extension receives a high volume of calls compared with other extensions.
This feature can be categorized as follows:

Extension Group
Calls to a UCD group hunt for an idle extension in a circular way, starting at the extension following the last one called.
UCD Group can be made up by assigning the group type of an Extension Group as "UCD." Up to 128 UCD Groups, each consisting of more than one extension in the same tenant, can be created in the system.

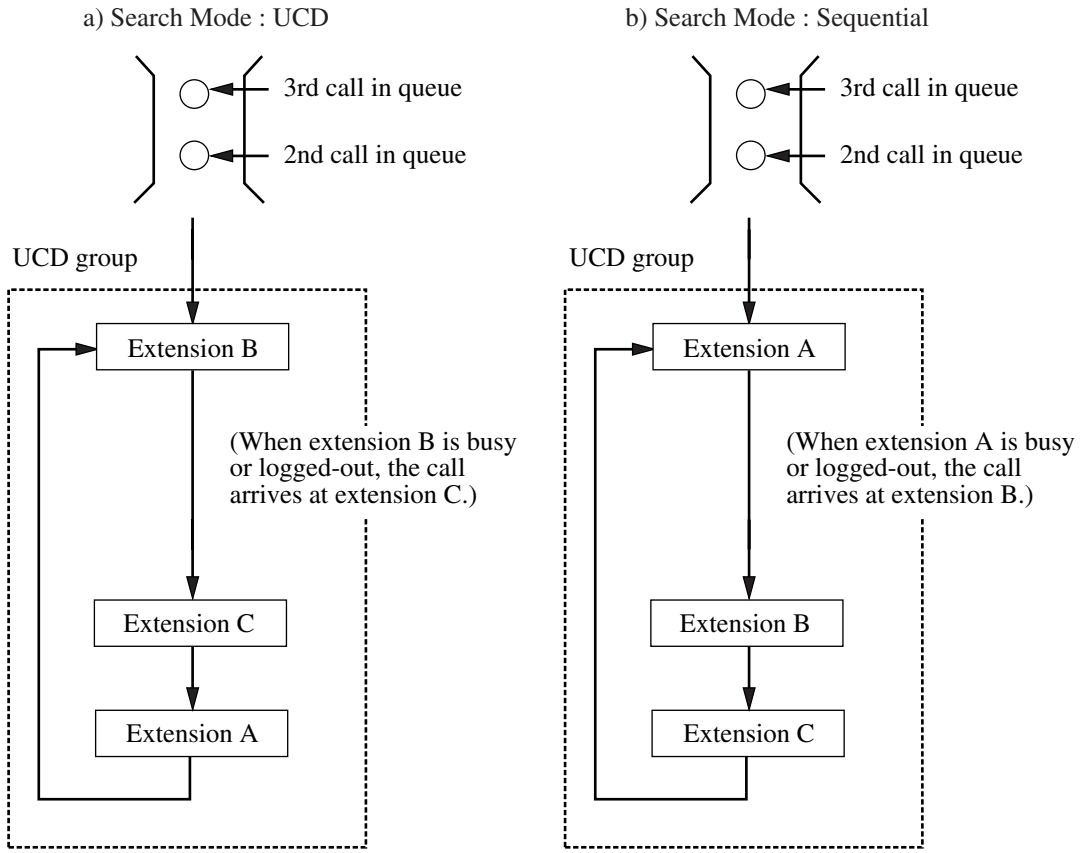
Incoming Group
Calls to a UCD group hunt for an idle extension in the order assigned in the Incoming Group. It is programmable whether to start at the extension following the last one called or to always start at the first assigned extension by System Programming <Section 3.5 Incoming Group, "Search Mode" in the Programming Guide>.
UCD Group can be made up by assigning the group type of an Incoming Group as "UCD." Up to 96 UCD Groups can be created in the system.

(1) Outline sketch of UCD feature

1. When more than one call is in the UCD group, the 1st call will arrive at extension A first.


Calls have arrived at a UCD group
3rd call in queue
2nd call in queue
1st call in queue
UCD group
Extension A
(When extension A is busy or logged-out, the call arrives at extension B.)
Extension B
(When extension B is busy or logged-out, the call arrives at extension C.)
Extension C
(When extension C is busy or logged-out, the call arrives at extension A.)

2. If the 1st call arrives at extension A,
a) the 2nd call will arrive at extension B.
b) the 2nd call will arrive at extension A.


a) Search Mode : UCD
3rd call in queue
2nd call in queue
UCD group
Extension B
(When extension B is busy or logged-out, the call arrives at extension C.)
Extension C
Extension A
b) Search Mode : Sequential
3rd call in queue
2nd call in queue
UCD group
Extension A
(When extension A is busy or logged-out, the call arrives at extension B.)
Extension B
Extension C

3. When the 2nd call arrives at extension B, the 3rd call will arrive at extension C.

Notes

- **Busy status**
  If group members are in one of the following conditions, they are considered as busy.
  (1) The extension is in Call Forwarding / Do Not Disturb (FWD / DND) mode.
  — Calls to a UCD Group may ring the extension in FWD / DND mode, or skip it. This is determined by System Programming <Section 3.3 Extension Group / 3.5 Incoming Group, "FWD / DND Mode" in the Programming Guide>.
  (2) Another call is already ringing on the extension.
  (3) The extension is off-hook.
  (4) The extension is logged-out.
- **Login / Logout (Group Login / Logout)**
  Extension users in the UCD Group can leave the group temporarily when they are away from their desks, to prevent calls being sent to their extensions (Logout).
  They can return to the group when they are ready to answer calls (Login).

- **Group Login / Logout**
  When a single extension belongs to multiple different Incoming Groups at a time, Group Login / Logout setting works on the Incoming Group basis.

- **UCD Supervisory Features**
  Login Monitor
  <For Extension Group members>
  Login / Logout status of the UCD Group members can be monitored through Busy Lamp Field of the corresponding DSS button.
  Login Monitor is enabled or disabled by System Programming <Section 3.3 Extension Group, "LOGIN Monitor" in the Programming Guide>.
  <For Incoming Group members>
  Login / Logout status of the UCD Group members can be monitored by the extension specified as the Supervisor Extension through Busy Lamp Field of the corresponding DSS button.

- **UCD Monitor Mode**
  The extension specified as the Supervisor Extension can monitor the number of calls put in the waiting queue by dialing the feature number for "UCD Monitor Mode."
  To start UCD monitor: dial feature number + UCD Group FDN
  To end UCD monitor: dial feature number + "*"
  You can also use the Features menu of a large display DPT.
  The extension that can perform this feature is determined by System Programming <Section 3.3 Extension Group / 3.5 Incoming Group, "Supervisor Extension" in the Programming Guide>.

- **What if a call ringing on a member extension is not answered?**
  If not answered within a specified period of time (Call Forwarding — No Answer Time), the call is transferred to the next idle member extension, or the call continues to ring on the current destination extension.
  This is determined by System Programming <Section 3.3 Extension Group / 3.5 Incoming Group, "FWD-No Answer" in the Programming Guide>.

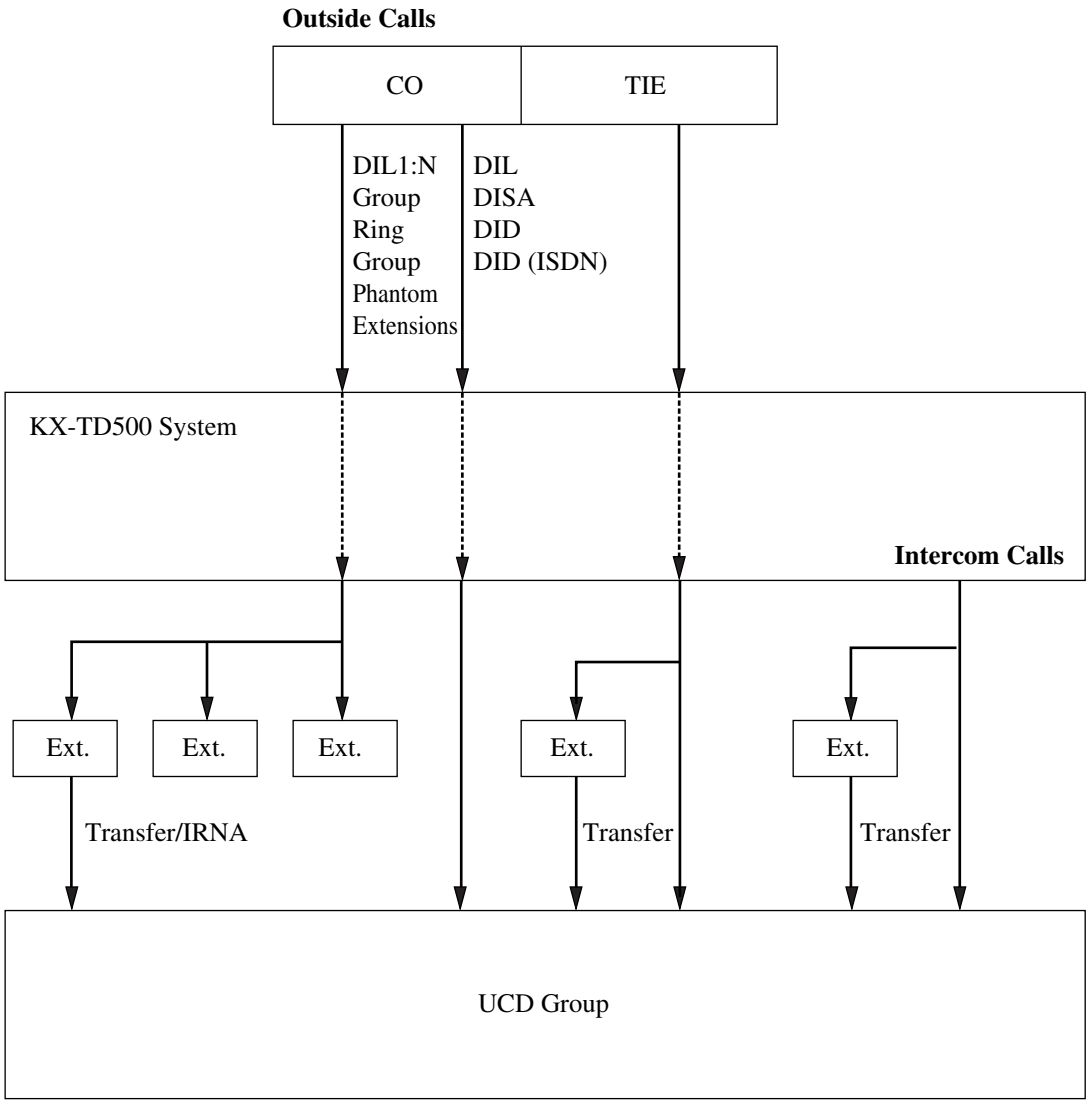
- **Auto Logout**
  A member extension may be logged-out automatically, if it does not answer the call for pre-determined times (1-10) consecutively. This is determined by System Programming <Section 3.3 Extension Group / 3.5 Incoming Group, "Auto Logout Mode" in the Programming Guide>.
  PT: To use this feature correctly, program Login / Logout (Group Login / Logout) button. After the system activates Auto Logout, press Login / Logout (Group Login / Logout) button in the off-hook status to go back to the Login mode.
  Any telephone: After the system activates Auto Logout, enter the feature number for Login (Group Login) in the off-hook status to go back to the Login mode.

- **UCD Call Waiting**
  This feature is different from regular Call Waiting. This feature (if enabled) allows UCD group members to hear a Call Waiting tone when an outside / inside call arrives but all the extensions in the UCD Group are busy.
  However, if a single extension belongs to multiple different Incoming Groups and there are calls in the waiting queue in one of the Incoming Groups, the Call Waiting tone is generated at the busy extensions.
  The tone stops only when there are no calls in the waiting queue in all of the groups.
- **All Logout**
  All extensions in the Extension Group or Incoming Group can be logged-out. This is determined by System Programming <Section 2.8 System Option, "Empty Group" in the Programming Guide>.
  If this feature is disabled by System Programming, the extension user cannot leave the group (Log-Out).
  At least one extension must be logged in.
  However, this does not apply to Auto-Logout of the UCD group extensions.
- **Call Log, Incoming**
  If a CO call to a UCD Group is not answered, the caller's information is recorded in the Call Log of the last extension at which the call rang.

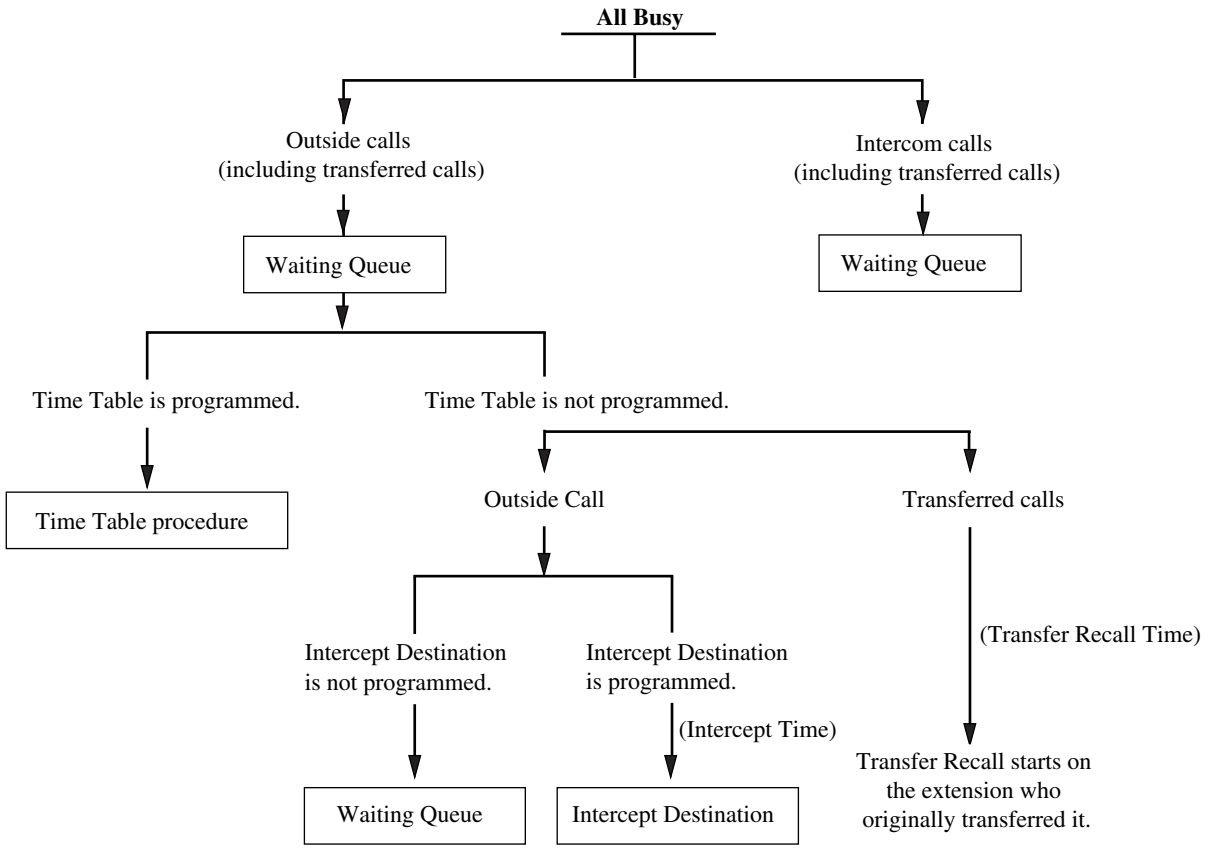
(2) Types of calls which come in on a UCD Group

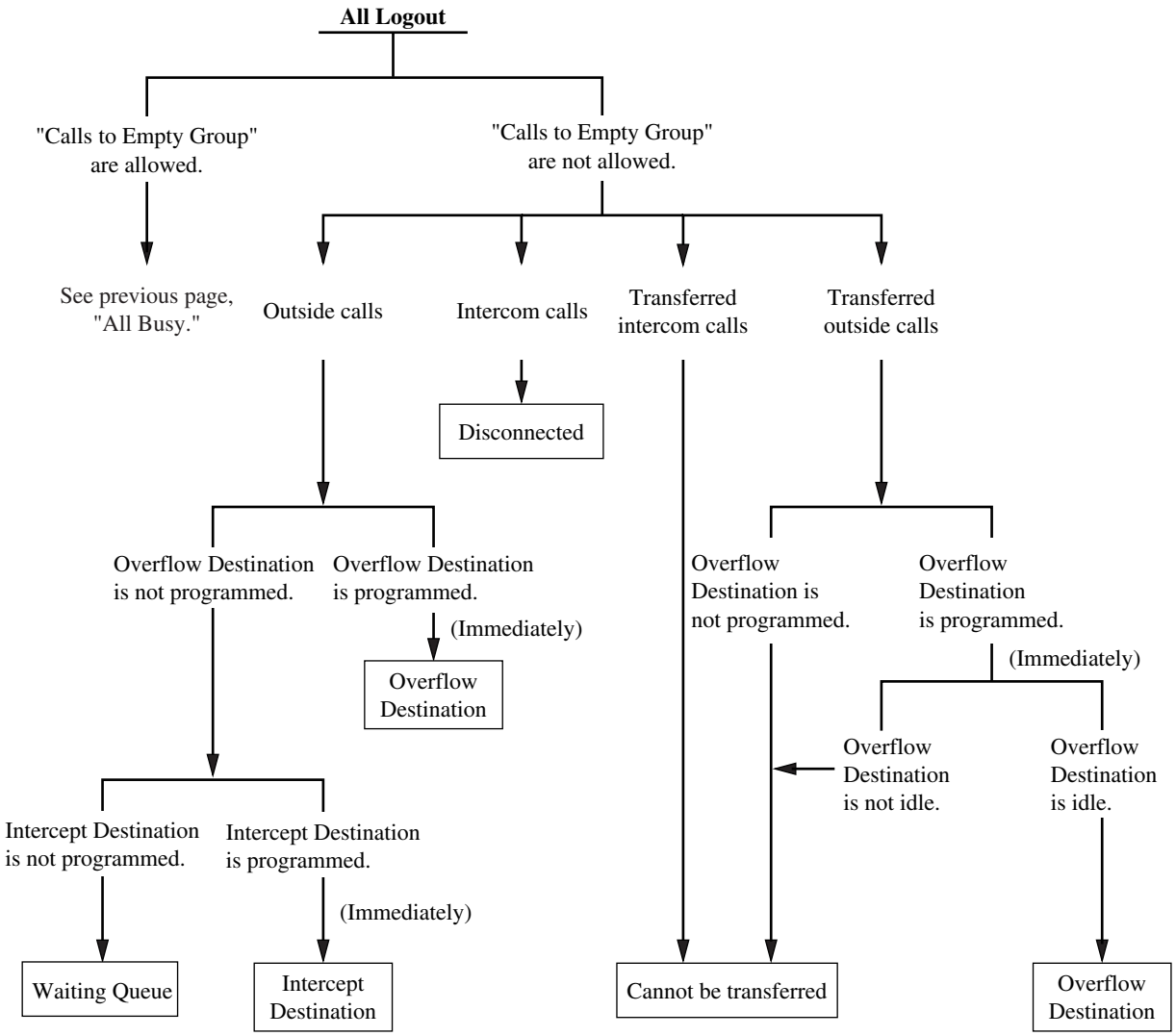
FDN (Floating Directory Number) for UCD Group can be assigned or dialed as a destination of the following calls:

Outside calls	DID, DID (ISDN), DIL, DISA, IRNA, Transfer, TIE
Intercom calls	Intercom, Transfer


Outside Calls
CO
TIE
DIL1:N
Group
Ring
Group
Phantom
Extensions
DIL
DISA
DID
DID (ISDN)
KX-TD500 System
Intercom Calls
Ext.
Ext.
Ext.
Ext.
Ext.
Transfer/IRNA
Transfer
Transfer
UCD Group

(3) What if all extensions in a UCD Group are busy or logged out?





Notes

- **Overflow destination**
  One of the following five destinations can be assigned as the Overflow destination per UCD Group: an extension, other Extension Groups, other Incoming Groups (except DIL 1:N Group), Phantom Extension or TAFAS (outside calls only).
- If the overflow destination or UCD Time Table is not programmed, the call is put in the waiting queue. Then if not answered within a specified period of time (Intercept time), the call will be transferred to the IRNA destination.

(4) UCD Time Table

If all extensions in a UCD group are busy, the incoming CO calls will be handled by the UCD Time Table procedure.
Up to 32 UCD Time Tables, max. 16 steps for each, can be assigned by System Programming.
The following commands are provided to make up a UCD Time Table procedure.

Command list and functions

Command	Functions
S (1-8)	OGM (1-8) is sent to the caller if available. If not, wait until OGM (1-8) becomes available.
1T-4T	Callers are put in the waiting queue for N (1-4) × 8 seconds while hearing the ringback tone.
RET	Returns to the first step of the sequence.
TR	Transfers a call to the Overflow destination.
OFF	Disconnects the call compulsorily.

Example of UCD Time Table Assignment

UCD	FDN	OFDN	TT
1	1091	1001	1
2	1092	1002	2
3	1093		
4	1094		
5	1095		
6	1096		
7	1097		
8	1098		
9	1099		

UCD : UCD Group Number

FDN : Floating Directory Number of the UCD Group

OFDN : Overflow Destination FDN

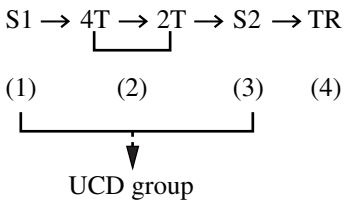
TT : Time Table Number (1 - 32)

Procedure Assignment Example

UCD Time Table procedure can be assigned as follows:

Table No.	Sequence
1	S1 → 4T → 2T → S2 → TR → →
2	S1 → 2T → S3 → OFF → → →
3	1T → TR → → → → → →
4	S1 → 2T → S4 → 2T → TR → →

(Example 1)



1. The caller hears OGM 1, if available.

(Sample OGM 1)

Sorry, all lines are busy. Please wait a moment.

- What if OGM 1 is busy?
  The caller first hears a ringback tone and then will hear OGM 1 as soon as it becomes available (Go to step 2).
- What if OGM 1 is OUS (Out-of-Service)?
  Step 1 will be skipped (Go to step 2).

2. The caller is put in the waiting queue for 48 seconds (4T + 2T).

3. The caller hears OGM 2.

(Sample OGM 2)

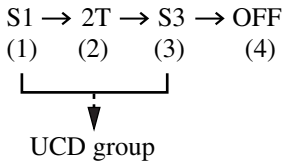
Sorry, all lines are still busy. Calling the Operator.

4. The caller is transferred to the Overflow destination (Operator or covering extension).

Note

- During Steps 1 - 3, the caller will be connected to a UCD group member as soon as anyone of members becomes available to answer the call.

(Example 2)



1. The caller hears OGM 1, if available.

(Sample OGM 1)

Sorry, all lines are busy. Please wait a moment.

- What if OGM 1 is busy?
  The caller first hears a ringback tone and then will hear OGM 1 as soon as it becomes available (Go to step 2).
- What if OGM 1 is OUS (Out-of-Service)?
  Step 1 will be skipped (Go to step 2).

2. The caller is put in the waiting queue for 16 seconds (2T).

3. The caller hears OGM 3.

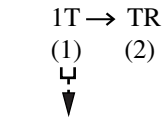
(Sample OGM 3)

Sorry, all lines are still busy. Please call us again. Thank you for calling.

If OGM 3 is busy, the caller first hears Music on Hold and then will hear OGM 3 as soon as it becomes available.

4. The caller is disconnected from the switch.

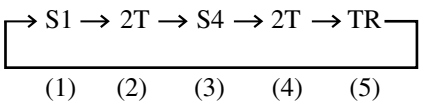
(Example 3)



1. The caller is put in the waiting queue for 8 seconds (1T).

2. The caller is transferred to the Overflow destination.

(Example 4)



1. The caller hears OGM 1, if available.

(Sample OGM 1)

Sorry, all lines are busy. Please wait a moment.

- What if OGM 1 is busy?
  The caller first hears a ringback tone and then will hear OGM 1 as soon as it becomes available (Go to step 2).
- What if OGM 1 is OUS (Out-of-Service)?
  Step 1 will be skipped (Go to step 2).

2. The caller is put in the waiting queue for 16 seconds (2T).

3. The caller hears OGM 4.

(Sample OGM 4)

Sorry, all lines are still busy. Please wait a moment.

If OGM 4 is busy, the caller hears Music on Hold and then will hear OGM 4 as soon as it becomes available.

4. Same as step 2.

5. The caller is transferred to the Overflow destination.

Notes

- The UCD Time Table procedure applies to outside calls (including transferred calls) only.
- Any command after "TR," "RET" or "Blank" does not function.
- If any unavailable OGM S(1-8) is assigned in the UCD Time Table, it will be ignored.

Conditions

- This feature must be enabled by System Programming for the desired UCD Group(s).
- In addition, each extension must enable regular Call Waiting feature <Section "4.3.17 Call Waiting" in the User Manual>.
- **UCD-OGM**
  To utilize OGM messages for UCD callers, assign "OGM Type" to "UCD-OGM" by System Programming <Section 3.6 OGM Group, "OGM Type" in the Programming Guide>.
- **Music on Hold or Ringback Tone**
  It is determined by System Programming <Section 2.8 System Option, "1. Sound source during transfer" in the Programming Guide> whether to send a ringback tone or Music on Hold to the caller.

Programming Guide References

- 1.4 Extension Port Assignment
  - Group No.
- 2.3 Numbering Plan
  - Login / Logout
  - Group Login / Logout
  - UCD Monitor Mode
- 2.5 System Timer
  - Intercept Time
- 2.8 System Option
  - Sound source during transfer
  - Empty Group
- 3.3 Extension Group
  - FDN
  - Tenant No.
  - [Overflow Setting] Destination – Day / Night
  - Group Type
  - FWD / DND Mode
  - Calls to Empty Group
  - [UCD Setting] Time Table No.
  - [UCD Setting] FWD No Answer
  - [UCD Setting] Auto LOGOUT Mode
  - [UCD Setting] Supervisor Extension
  - [UCD Setting] LOGIN Monitor
  - [UCD Setting] UCD Call Waiting
- 3.5 Incoming Group
  - FDN
  - [Overflow Setting] Destination – Day / Night
  - Group Type
  - FWD / DND Mode
  - Search Mode
  - Calls to Empty Group
  - [UCD Setting] Time Table No.
  - [UCD Setting] FWD No Answer
  - [UCD Setting] Auto LOGOUT Mode
  - [UCD Setting] Supervisor Extension
  - [UCD Setting] UCD Call Waiting
- 3.6 OGM Group
  - FDN
  - OGM Type
- 4.2 Trunk Line
  - Destination—Day/Night/Lunch/Break
- 4.3 Extension Line
  - Group No.

Features Guide References

1.3 System Features

- Extension Group
- Incoming Group
- Outgoing Message (OGM)

1.8 Ringing Features

- Log-In/Log-Out

User Manual References

- 4.3.80 UCD Login Monitor
- 4.3.81 UCD Monitor Mode

1.6 Originating Features

Alternate Calling—Ring/Voice

Description

Allows an extension user either to ring-signal (Ring call) or voice-signal (Voice call) the other PT extensions.

Ring call: The called PT rings.

Voice call: The caller's voice is heard through the built-in speaker of the called PT instead of ringing.

The calling extension user can switch ring-signaling to voice-signaling and vice versa by pressing "✳" during an intercom call.

Conditions

- **Mode Selection**
  The PT user can select either to be ring-signaled or voice-signaled by Station Programming.
- Any extension (PT, SLT) user can use this feature during an intercom call if the other party is a PT extension.
- If the other party is an SLT extension, only Ring-Calling mode is available.
- **One time switching**
  Switching of signaling mode is available only once during a call.
- **Voice-signaling is not available in the following cases:**
  – if the other extension is an SLT.
  – if the other extension is busy on another call.
  – if another call is ringing on the other extension.

Programming Guide References

System Programming is not required.

Features Guide References

1.6 Originating Features
- Inter Office Calling

1.9 Answering Features
- Hands-free Answerback

User Manual References

- 2.2.7 Intercom Alert Assignment
- 4.3.3 Alternate Calling — Ring / Voice
- 4.3.40 Hands-free Answerback
- 4.3.42 Inter Office Calling

Automatic Callback Busy (Camp-On)

Description

The system calls back the extension user when the called party or the selected CO line becomes idle, if this feature was activated beforehand.

Automatic Callback - Extension
If the extension user answers the callback ringing, the called extension (previously busy) automatically starts ringing.

Automatic Callback - Trunk
If the extension user answers the callback ringing, the designated CO line (previously busy) is automatically selected for making a CO call.

Conditions

- If the callback ringing is not answered in four rings (within 10 seconds), this feature is canceled.
- The extension user can cancel this feature by dialing the feature number for "Automatic Callback Busy Cancel."
- More than one extension user can set this function to one extension or CO line at the same time.
- **FWD / DND Override**
  Call Forwarding or Do Not Disturb feature does not work for the callback ringing. It always rings the extension on which this feature was activated.

Programming Guide References

- 2.3 Numbering Plan
  - Automatic Callback Busy Cancel

Features Guide References

1.6 Originating Features
- Automatic Route Selection (ARS)
- Trunk Access

User Manual References

- 4.3.6 Automatic Callback Busy (Camp-On)

Automatic Route Selection (ARS)

Description

Automatic Route Selection (ARS) is a system programmable feature that automatically selects the least expensive route available at the time an outgoing CO call is made. ARS applies to an outgoing CO call made by dialing the feature number for Local CO Line Access / ARS (9 = default). Pre-programming eliminates the need of dialing the access code of the least expensive carrier.
The appropriate Trunk Group is selected and the carrier access code is added before the number is outpulsed.

System Programming Example (Please refer to "7. ARS" section in the Programming Guide)

The following shows how to program ARS so that the extension user can call the XYZ Company via the least expensive line.

Step 1. To utilize ARS feature, set "Automatic Route Selection" in "System-Tenant" to "Yes."

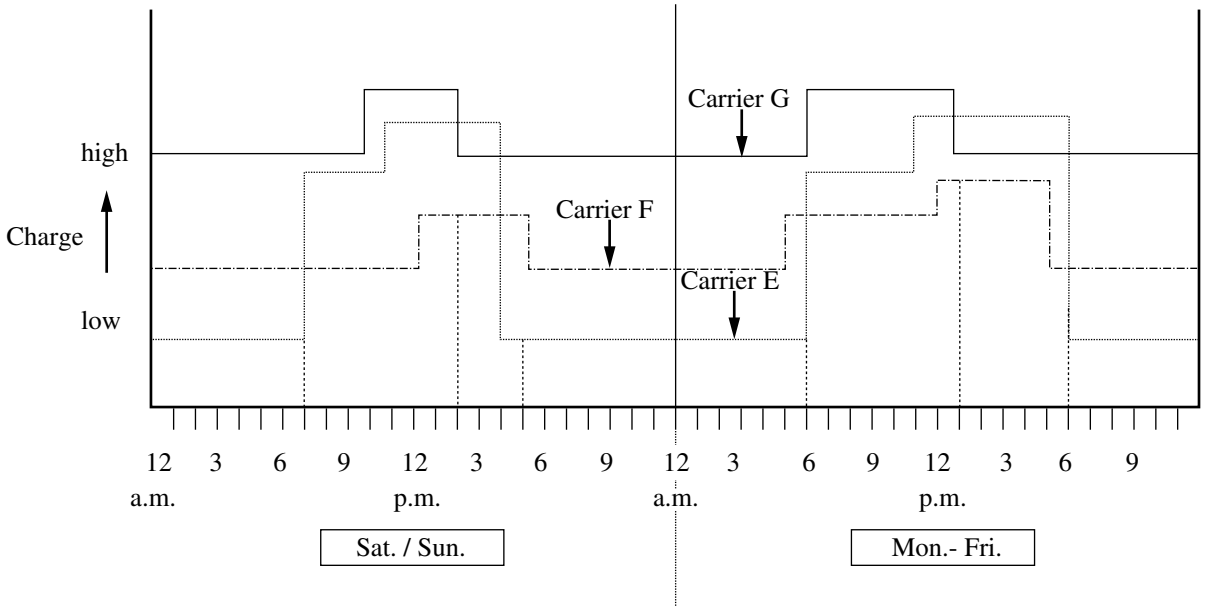
Step 2. Store the telephone number of the outside party that will use the ARS feature. For example, if XYZ Company's telephone number is "1-234-567-8910" (not including the line access code), store the leading 7 digits of the number "1234567" and associated Routing Plan No. (01 for example) in "ARS - Leading Digits Table."

Table A (Example: ARS Leading Digits Table)

Entry No.	Dial	Routing Plan No.
001	1234567	01
002		
•		
•		
•		
800		

Step 3. Check all carriers available to call the stored telephone number and their Trunk Groups. Supposing that there are three carriers available to call the XYZ Company and each carrier's line is assigned to a Trunk Group as follows:
Carrier E — Trunk Group 1
Carrier F — Trunk Group 2
Carrier G —Trunk Group 3
Then check the fee charged by each carrier:

Table B



As shown in Table B, the least costly route varies with the day of the week and the time of day. To select the least expensive line at a certain time, split the day into three zones as follows:

Sat. / Sun.	Mon. - Fri.
(1) 7:00 a.m. - 2:00 p.m.	(1) 7:00 a.m. - 1:00 p.m.
(2) 2:00 p.m. - 5:00 p.m.	(2) 1:00 p.m. - 6:00 p.m.
(3) 5:00 p.m. - 7:00 a.m.	(3) 6:00 p.m. - 7:00 a.m.

To program the time zones listed above, use the program "ARS - Time Table." In this table, up to four time zones (Time-A, Time-B, Time-C, Time-D) can be programmed. Enter the starting hour for each zone.

Table C (Example: ARS Time Table)

Sat. / Sun.		Mon. - Fri.	
Time Zones	**Entry**	**Time Zones**	**Entry**
Time-A	7:00 a.m.	Time-A	7:00 a.m.
Time-B	2:00 p.m.	Time-B	1:00 p.m.
Time-C	5:00 p.m.	Time-C	6:00 p.m.
Time-D	Disable	Time-D	Disable

← Enter the starting time of each zone. If a zone is not necessary, select "Disable."

Step 4. Determine the priority of the Trunk Groups in each time zone.
The table on the next page shows the carriers and Trunk Groups selected for each priority and time zone:

Table D

	Time-A	Time-B	Time-C
Least Costly Carrier / Trunk Group (Priority 1)	Carrier F / Group 2	Carrier F / Group 2	Carrier E / Group 1
Next Less Costly Carrier / Trunk Group (Priority 2)	Carrier E / Group 1	Carrier G / Group 3	Carrier F / Group 2
Most Costly Carrier / Trunk Group (Priority 3)	Carrier G / Group 3	Carrier E / Group 1	Carrier G / Group 3

Assign the above Routing Plan (Table D) to "ARS - Routing Plan" in the Programming Guide. Enter the Trunk Group numbers in order of priority. If the specified Trunk Group requires digits modification, assign the appropriate Digits Modification Table number (01 to 48). This table is required to have the system automatically add a specific carrier access code to the extension user-dialed number.

Table E (Example: ARS Routing Plan)

	Time -A		Time -B		Time -C		Time -D	
	TRG	Modify	TRG	Modify	TRG	Modify	TRG	Modify
Priority 1	2	2	2	2	1	1		
Priority 2	1	1	3	3	2	2		
Priority 3	3	3	1	1	3	3		

TRG: Trunk Group No.
Modify: Modification Table No.

Note

- Up to 16 Priorities (01-16) can be utilized in the system.

Step 5. Create ARS Digits Modification Table. Carriers E, F and G match the Trunk Groups and Modification Tables as follows and have the following Access Code:

Table F

Carrier	TRG	Mod. Table	Access Code
E	1	1	1-0-333
F	2	2	1-0-555
G	3	3	1-0-666

According to Table F, enter the Access Codes in the respective Modification Tables as follows:

Table G (Example : ARS Digits Modification Table)

Modification Table 1		Modification Table 2		Modification Table 3		
Remove	0	Remove	0	Remove	0	← Enter the number of digits to be deleted.
Add	10333	Add	10555	Add	10666	← Enter the number to be added.

If Modification Table 1 is applied, the user-dialed number "9-1-234-567-8910" is modified to "9-10333-1-234-567-8910" to access the least expensive Carrier E.
Similarly, if Modification Table 2 is applied, it is modified to "9-10555-1-234-567-8910" to access Carrier F.
Use the "Digits to delete" program when it is necessary to delete some leading digits from the extension user-dialed number. For example, if the extension user manually dials a Carrier Access Code but the carrier is not the least expensive, modification is required. For example, to delete "10333" from the beginning of the extension user-dialed number and add "10555," enter "5" in the "Digits to delete" program. Enter "10555" in the "Number to be added" program. When "9-10333-1-234-567-8910" is dialed,

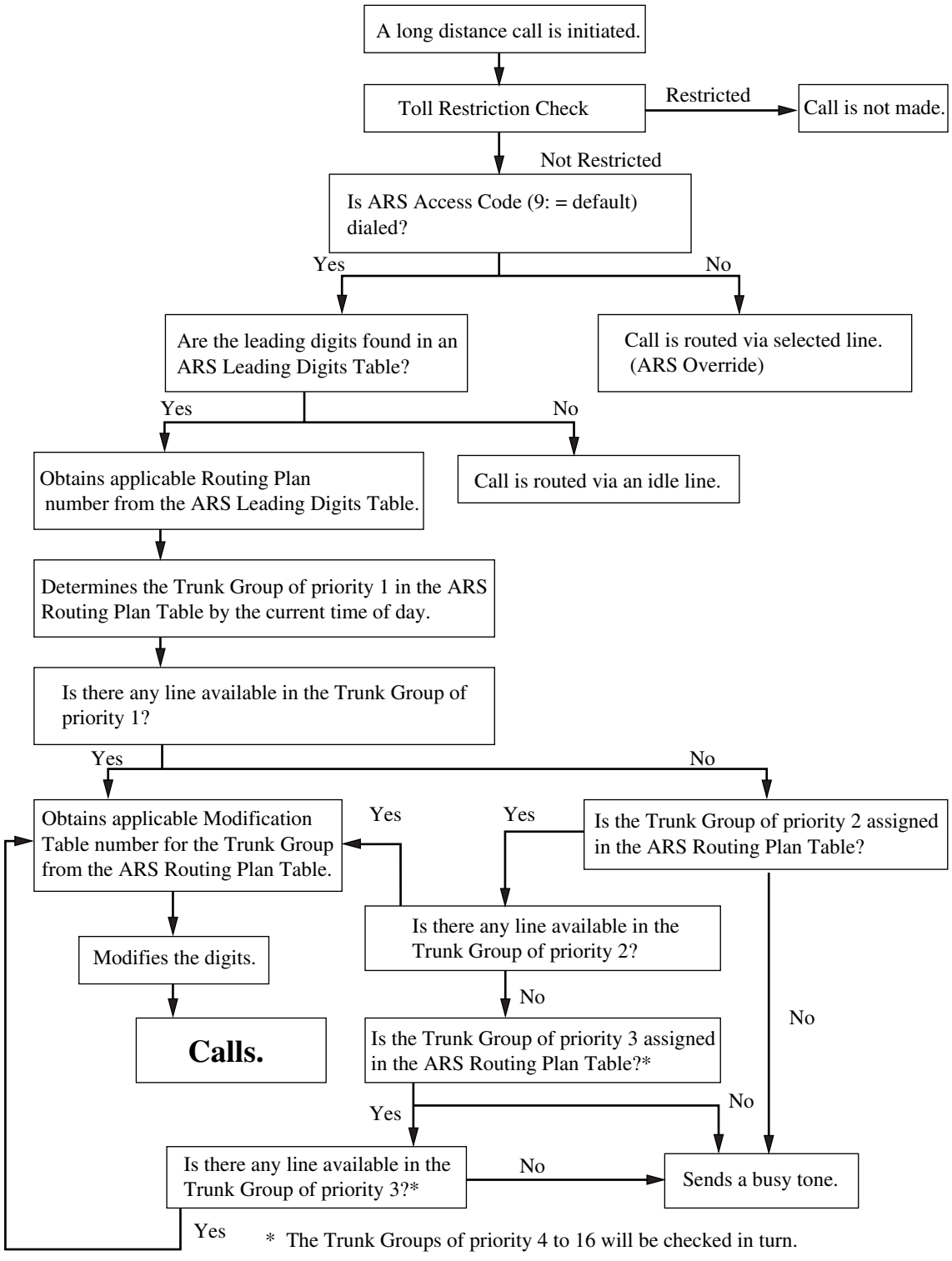
9-10333-1-234-567-8910.

The leading 5 digits (except a line access code) are deleted and "10555" is added. "10555-1-234-567-8910" is sent to the CO line.

Note

- "X" can be used as a wild card character which substitutes any digit in its position. (Example 1.) Leading Digits: 1800->ARS Plan 1. Leading Digits: 1XXX->ARS Plan 2. If the user-dialed number is "1800," the system selects ARS Plan 1. (Example 2.) Leading Digits: 1800->ARS Plan 1. Leading Digits: 1X->ARS Plan 2. If the user-dialed number is "1800," the system selects ARS Plan 2.

Flow Chart of ARS procedures


A long distance call is initiated.
Toll Restriction Check
Restricted
Call is not made.
Not Restricted
Is ARS Access Code (9: = default) dialed?
Yes
No
Are the leading digits found in an ARS Leading Digits Table?
Call is routed via selected line. (ARS Override)
Yes
No
Obtains applicable Routing Plan number from the ARS Leading Digits Table.
Call is routed via an idle line.
Determines the Trunk Group of priority 1 in the ARS Routing Plan Table by the current time of day.
Is there any line available in the Trunk Group of priority 1?
Yes
No
Obtains applicable Modification Table number for the Trunk Group from the ARS Routing Plan Table.
Yes
Yes
Is the Trunk Group of priority 2 assigned in the ARS Routing Plan Table?
Modifies the digits.
Is there any line available in the Trunk Group of priority 2?
No
Calls.
Is the Trunk Group of priority 3 assigned in the ARS Routing Plan Table?*
No
Yes
No
Is there any line available in the Trunk Group of priority 3?*
No
Sends a busy tone.
Yes
* The Trunk Groups of priority 4 to 16 will be checked in turn.

Conditions

WARNING
The software contained in ARS feature to allow user access to the network must be upgraded to recognize newly established network area codes and exchange codes as they are placed into service.
Failure to upgrade the premises PBXs or peripheral equipment to recognize the new codes as they are established will restrict the customer and the customer's employees from gaining access to the network and to these codes.
KEEP THE SOFTWARE UP-TO-DATE WITH THE LATEST DATA.

- **Tenant Service**
  ARS mode can be turned on / off on a tenant basis.
- **Toll Restriction**
  Toll Restriction check is performed before ARS is applied.
- **Dialing Plan**
  ARS works according to the selected dialing plan. Thus, if the dialed number is not found in the dialing plan (Leading Digits Table), the CO call is made by "Trunk Access, Idle" (Automatic Line Access) feature.
- **ARS Override**
  ARS is not applied to a call made by pressing the G-CO or S-CO button.
- This feature also applies to a call forwarded by "Call Forwarding - to Trunk" feature.
- If a call is made by using a memory dialing (Redial, One-Touch Dialing, Station / System Speed Dialing, Call Log, Outgoing) a dial tone is not sent to the extension user.
- If the Inter-digit time (fixed to 15 seconds) expires while making an outgoing call with ARS, the system will select a CO line on a Local Access basis and return CO dial tone or reorder tone is sent to the caller. This is determined by System Programming <Section 2.8 System Option, "59. ARS Call Timeout Mode" in the Programming Guide>.

Programming Guide References

- 2.2 Tenant
  - Automatic Route Selection
- 2.3 Numbering Plan
  - Local CO Line Access / ARS
- 2.8 System Option
  - ARS Call Timeout Mode
- 7.2 Time Table
- 7.3 Leading Digits Table
- 7.4 Routing Plan
- 7.5 Digits Modification Table

Features Guide References

1.6 Originating Features
- Trunk Access

User Manual References

- 4.3.54 Outward Dialing, Trunk Access

Busy Station Signaling (BSS)

Description

Used to prompt a busy extension (ringing or engaged in a call) to answer a new incoming call. When BSS is activated by the calling extension, a call waiting tone is generated at the busy extension to inform that another call is waiting.

Conditions

- BSS feature functions, if the other busy extension is an ICM type PT in the following status:
  (1) The extension is off-hook.
  (2) ICM button is idle.
  (3) "Call Waiting" is enabled.
- **BSS / OHCA / Whisper OHCA**
  If an extension user dials "1" while hearing a busy tone, BSS or OHCA or Whisper OHCA may be activated at the called extension.
  This is determined by the following conditions.

Calling extension	**Called extension**			
COS-OHCA assignment	Call Waiting setting			
	OFF	ON		
	0	1	2	3
Disable	-	BSS	BSS	BSS
Enable	-	BSS	OHCA*1→BSS	W-OHCA*2 →OHCA→BSS

*1 OHCA (Off-Hook Call Announcement) is activated when the called extension is KX-T7130, KX-T7235 or KX-T7436.
*2 Whisper OHCA is activated when both calling and called extensions are using one of the KX-T7400 series PTs.

- BSS, OHCA and whisper OHCA do not function, if the other extension is a DN type PT.

Programming Guide References

- 2.3 Numbering Plan
  - Call Waiting Set / Cancel

Features Guide References

1.6 Originating Features

- Off-Hook Call Announcement (OHCA)
- Off-Hook Call Announcement (OHCA), Whisper

1.9 Answering Features

- Call Waiting

User Manual References

- 4.3.8 Busy Station Signaling (BSS)
- 4.3.12 Call Park
- 4.3.49 Off-Hook Call Announcement (OHCA)
- 4.3.50 Off-Hook Call Announcement (OHCA) —Whisper

Do Not Disturb (DND) Override

Description

Allows the extension user to ring the other extension in DND mode by dialing "1" while hearing the DND tone.

Conditions

- **Class of Service (COS) programming**
  COS programming <Section 2.4 Class of Service (COS), "DND Override" in the Programming Guide> determines the extension users who can perform DND Override.
- If the extension user hears a reorder tone after dialing "1," the extension is not permitted to execute "Do Not Disturb (DND) Override" feature by System Programming.
- **What if a busy tone is heard after executing DND override?**
  If the extension user hears a busy tone after performing this feature, the other extension in DND mode is busy.
  In this case, the extension can perform the following features.
  — Automatic Callback Busy (Camp-on)
  — Busy Station Signaling (BSS)
  — Executive Busy Override-Extension
  — Off-Hook Call Announcement (OHCA)
  — Off-Hook Call Announcement (OHCA), Whisper

Programming Guide References

- 2.4 Class of Service (COS)
  – DND Override

Features Guide References

1.8 Ringing Features
- Do Not Disturb (DND)

User Manual References

- 4.3.27 Do Not Disturb (DND)
- 4.3.28 Do Not Disturb (DND) Override

Electronic Station Lockout

Description

Allows the extension user to lock his extension so that other users cannot make outside calls. Any 3-digit numeric code (000-999) can be used to lock and unlock the extension.

Conditions

- **How does this feature restrict the extension?**
  This feature restricts the extension from making an outside call only. Other operations are not affected.
- **Remote Station Lock**
  Remote Station Lock Control overrides Electronic Station Lockout. If the Manager extension or an Operator extension sets Remote Station Lock on an extension that has already been locked by the extension user, the extension user cannot unlock it.
- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.

Programming Guide References

- 2.3 Numbering Plan
  - Station Lock Set / Cancel
- 2.8 System Option
  - Special dial tone after setting feature
- 4.3 Extension Line
  - Station Lock Password

Features Guide References

1.3 System Features

- Remote Station Lock Control

User Manual References

- 4.3.30 Electronic Station Lockout
- 4.4.9 Remote Station Lock Control

Emergency Call

Description

Allows any extension user to dial out a pre-assigned emergency number after seizing a CO line regardless of the restrictions imposed on the extension.

Conditions

- Up to 10 emergency numbers, such as 911 (emergency services) can be stored. The number "911" is already stored at the factory by default.
- Making an emergency call is allowed even in the following cases;
  – in Account Code — Verified (All Calls, Toll Restriction Override) mode
  – in any toll restriction level
  – in Electronic Station Lockout / Remote Station Lock
- If the KX-TD500 System is connected to a host PBX as a behind PBX, the extension user must dial the host PBX line access code after dialing the line access code and it must be included as the first digit of the emergency number.

Programming Guide References

- 5.4 Emergency Dial Code

Features Guide References

None

User Manual References

- 4.3.31 Emergency Call

Executive Busy Override

Description

Allows the extension user to interrupt an existing extension / outside call. This establishes a 3-party conference call.
This feature can be categorized as follows:

Executive Busy Override – Barge-In
Allows the PT user to interrupt an existing outside call (either "between two outside parties" or "between an outside party and an inside party") by pressing the red lit S-CO or DN button.

Executive Busy Override – Extension
Allows the extension (PT, SLT) users to interrupt an existing extension call (either "between two inside parties" or "between an inside party and an outside party") by dialing "2" after hearing a busy tone.

Conditions

[General]

- **Class of Service (COS) programming**
  COS programming <Section 2.4 Class of Service (COS), "Busy Override" in the Programming Guide> determines the extension users who can perform this feature.
- **Executive Busy Override Deny**
  It is possible for extension users to prevent this feature from being executed by another extension user.
- This feature does not work if "Executive Busy Override Deny" or "Data Line Security" is set at either one of two extensions or both of them.
- **Confirmation tone**
  When a 2-party call is changed to a 3-party call and vice versa, a confirmation tone is sent to all three parties. This tone can be eliminated by System Programming <Section 2.8 System Option, "8 Confirmation tone for Override Barge-in, Conference and Privacy Release" in the Programming Guide>.
- **Trunk Route Control**
  When the outside call made using a specific trunk is busy on another call, the Manager or the Operators can join the existing outside call by dialing "2" after hearing a busy tone.

[Barge-In]

- **<DN type PT>**
  This feature is available when one extension has an SDN button associated with the PDN button of the other.
- The pre-assigned extension users can interrupt an existing outside call even if access to that line is not allowed by System Programming.

Programming Guide References

- 2.3 Numbering Plan
  - Data Line Security Set / Cancel
  - Executive Busy Override Deny Set / Cancel
  - Trunk Route Control
- 2.4 Class of Service (COS)
  - Busy Override
  - Busy Override Deny
- 2.8 System Option
  - Confirmation tone for Override, Barge-in, Conference and Privacy Release

Features Guide References

1.9 Answering Features

- Executive Busy Override Deny

1.12 Conversation Features

- Conference, 3-Party

User Manual References

- 4.3.21 Conference, 3-Party
- 4.3.25 Data Line Security
- 4.3.33 Executive Busy Override
- 4.3.34 Executive Busy Override Deny
- 4.4.13 Trunk Route Control

Inter Office Calling

Description

Allows the extension user to call another extension user within the system or a tenant. An inter office call is a call between two extensions in the KX-TD500 system.

Conditions

- **Definition of busy extension status**
  <ICM type PT>
  – Off-hook
  – ICM button is not idle.
  <DN type PT>
  – When at least one DN is in use.
  <SLT>
  – Off-hook
  – an SLT is ringing.
  – an SLT has a call placed on hold.
- **Extension Number Assignment**
  Extension numbers (3 or 4 digits) are assigned to all extensions according to "Numbering Plan" by System Programming.
- **DSS Button**
  DSS buttons permit One-Touch access to an extension and provide Busy Lamp Field. A DSS button can be assigned on a Proprietary Telephone (PT) or DSS Console by Station, User or System Programming.
- **Call Directory - Extension Dialing**
  The extension user with one of the following PTs can make an extension call with "Call Directory - Extension Dialing" on the display of the following PTs:KX-T7235, KX-T7431, KX-T7433, KX-T7436.
- **Call Progress Tone**
  After dialing an extension number, the extension user may hear one of the following call progress tones:
  – **Ringback tone:** indicates that the other extension is being called.
  – **Confirmation tone:** indicates that the user can perform Voice Calling.
  – **Busy tone:** indicates that the other extension is busy.
  – **Do Not Disturb tone:** indicates that the other extension has DND enabled.
- **Tenant Service**
  If "Tenant Service" is employed, calling to other extensions in other tenants is enabled / disabled by System Programming.
- Names can be given to all extensions by User or System Programming. An extension number and a name, if programmed, are shown on the display PT during an intercom call.

Programming Guide References

- 1.4 Extension Port Assignment
  - Attribute
  - Tel. Type
  - DN
- 2.2 Tenant
  - Inter-tenant Calling (1 - 8)
- 2.3 Numbering Plan
  - 1st Hundred Block Extension
  - 2nd Hundred Block Extension
  - 3rd Hundred Block Extension
  - 4th Hundred Block Extension
  - 5th Hundred Block Extension
  - 6th Hundred Block Extension
  - 7th Hundred Block Extension
  - 8th Hundred Block Extension
  - 9th Hundred Block Extension
  - 10th Hundred Block Extension
  - 11th Hundred Block Extension - 16th Hundred Block Extension
- 4.3 Extension Line
  - Name
  - CO Key
- 4.4 DSS Console
  - DSS Key
- 4.7 ISDN Extension Line
  - Name

Features Guide References

1.16 Button Features

- Button, Direct Station Selection (DSS)
- Button, Line Access

1.17 Display Features

- Busy Lamp Field

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.4 [004] Extension Name Set
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.42 Inter Office Calling

Line Preference—Outgoing (Idle Line/No Line/Prime Line)

Description

A PT user can select a desired outgoing line preference to originate calls from the following three line preferences:

a) Idle Line Preference
When an extension user goes off-hook to make a call, an idle line is automatically selected from the pre-assigned lines.

b) No Line Preference
No line is selected when an extension user goes off-hook to make a call. He must select an appropriate Line Access button to make a call.

c) Prime Line Preference (default)
When an extension user goes off-hook to make a call, a pre-programmed prime line is selected automatically. A Prime Line can be selected from the following line access buttons.
<ICM type PT>
ICM, S-CO, G-CO, L-CO
<DN type PT>
PDN, SDN, S-CO, G-CO, L-CO

Conditions

- This feature is available when there is no incoming call on the extension or when the extension has set "No Line Preference for incoming calls," that is, "Line Preference-Incoming" overrides "Line Preference-Outgoing."
- Setting a new line preference feature cancels the previous setting.
- The CO lines available for extension users must be assigned by System Programming.
- **Line Preference Override**
  The extension user can override the Idle/Prime Line Preference temporarily by pressing the desired line access button (INTERCOM, CO or DN [PDN/SDN]) before going off-hook; or if Full One-Touch Dialing is enabled, press One-Touch Dialing, DSS, REDIAL, or SAVE button.

Programming Guide References

- 4.3 Extension Line
  - CO Key
  - [Preferred Line] Outgoing

Features Guide References

1.6 Originating Features
- Trunk Connection Assignment—Outgoing

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.12 Preferred Line Assignment — Outgoing
- 3.2.5 [005] Flexible CO Button Assignment

Off-Hook Call Announcement (OHCA)

Description

OHCA allows the extension user to inform a busy extension (engaged in a call using the handset) that another call is waiting by talking through the built-in speaker of the busy extension's PT. If the existing call is performed over the handset, the second conversation is made with the speakerphone so that the called extension can talk to two parties independently. OHCA is performed the same way as Busy Station Signaling (BSS). It depends on the telephone type of the called party whether BSS or OHCA is activated by the operation. If the called extension is KX-T7130, KX-T7235 or KX-T7436, OHCA becomes active.

Conditions

- **Call Waiting**
  OHCA is only effective when the called extension has set Call Waiting. If not, the caller will hear a reorder tone after dialing the extension number.
- **BSS / OHCA / Whisper OHCA**
  If an extension user dials "1" while hearing a busy tone, BSS or OHCA or Whisper OHCA will be activated at the called extension.
  This is determined by the following conditions.

Calling extension	**Called extension**			
COS-OHCA assignment	Call Waiting setting			
	OFF	ON		
	0	1	2	3
Disable	——	BSS	BSS	BSS
Enable	——	BSS	OHCA[*1] →BSS	W-OHCA[*2] →OHCA →BSS

[*1] OHCA (Off-Hook Call Announcement) is activated when the called extension is KX-T7130, KX-T7235 or KX-T7436.
[*2] Whisper OHCA is activated when both calling and called extensions are using one of the KX-T7400 series PTs.

- BSS, OHCA and Whisper OHCA do not function, if the other extension is a DN type PT.

Hardware Requirements

- DPT
  Basic shelf, expansion shelf 1, 2 have 16 OHCA paths which are connected each other.
- APT
  To utilize this feature, the OHCA card should be installed on a PLC card or HLC card beforehand.
- DPT
  To utilize this feature, the DOHCA card should be installed on the TSW card beforehand.

- DLC card with DPT
  A DLC card allows 8 DPTs that can be called with the OHCA feature at the same time.
- DHLC card with DPT
  A DHLC card allows 8 DPTs that can be called with the OHCA feature at the same time.
- DHLC card with APT
  A DHLC card allows one APT telephone that can be called with the OHCA feature at the same time.

Installation Manual References

- 2.3.3 DOHCA Card
- 2.7.2 OHCA Card (KX-T96136)

Programming Guide References

- 2.3 Numbering Plan
  - Call Waiting Set / Cancel
- 2.4 Class of Service (COS)
  - Off-Hook Call Announcement (OHCA)

Features Guide References

1.6 Originating Features
- Busy Station Signaling (BSS)
- Off-Hook Call Announcement (OHCA), Whisper

1.9 Answering Features
- Call Waiting

User Manual References

- 4.3.17 Call Waiting
- 4.3.49 Off-Hook Call Announcement (OHCA)

Off-Hook Call Announcement (OHCA), Whisper

Description

This is a variation of the OHCA feature.
The difference is, OHCA provides two-way communication, but Whisper OHCA provides one-way (from the calling extension to the called extension) communication.

Conditions

- **Call Waiting**
  Whisper OHCA is only effective when the called extension has set Call Waiting feature. If not, the caller will hear a reorder tone after dialing the extension number.
- **Non-KX-T7400 cases**
  Whisper OHCA is activated when both calling and called extensions are using the KX-T7400 series PTs by default. If either one of them is a non-KX-T7400 series PT, OHCA (when the called extension is an OHCA-capable PT) or BSS is activated.
  However, Whisper OHCA between two non-KX-T7400 series PTs can be enabled by System Programming < Section 2.8 System Option, "32. Whisper OHCA to extensions other than T74/75XX>.
- **Enabling Feature for Any PT**
  It is possible to enable the Whisper OHCA by any PT by System Programming. But it may not work properly (e.g., the OHCA may be heard by unintended parties.)
- **Conference Trunk**
  An idle conference trunk is required to perform this feature.
- **BSS / OHCA / Whisper OHCA**
  If an extension user dials "1" while hearing a busy tone, BSS or OHCA or Whisper OHCA will be activated at the called extension. This is determined by the following conditions.

Calling extension	**Called extension**			
COS-OHCA assignment	Call Waiting setting			
	OFF	ON		
	0	1	2	3
Disable	———	BSS	BSS	BSS
Enable	———	BSS	OHCA*1 →BSS	W-OHCA*2 →OHCA →BSS

*1 OHCA (Off-Hook Call Announcement) is activated when the called extension is KX-T7130, KX-T7235 or KX-T7436.
*2 Whisper OHCA is activated when both calling and called extensions are using one of the KX-T7400 series PTs.

- BSS, OHCA and Whisper OHCA do not function, if the other extension is a DN type PT.

Programming Guide References

- 2.3 Numbering Plan
  - Call Waiting Set / Cancel
- 2.4 Class of Service (COS)
  - Off-Hook Call Announcement (OHCA)
- 2.8 System Option
  - Whisper OHCA to extensions other than T74XX

Features Guide References

1.6 Originating Features

- Busy Station Signaling (BSS)
- Off-Hook Call Announcement (OHCA)

1.9 Answering Features

- Call Waiting

User Manual References

- 4.3.17 Call Waiting
- 4.3.50 Off-Hook Call Announcement (OHCA) —Whisper

Operator Call

Description

To direct operator-seeking incoming calls to the Operators, one of the following ways can be used.

Intercom calls

Extension users can call the Operator:
- by dialing the feature number for "Operator Call"
- by dialing the FDN for Operator Group

Outside calls

To direct outside callers to the Operators, set the FDN of an Operator Group as the destination of the following calls:
-DISA
-DID
-DID (ISDN)
-DIL
-IRNA
-TIE

Conditions

- An operator-seeking call (extension / outside) may come in on a single operator or all operators in the group at once depending on System Programming.
- The Operators can perform the special features which are available for the Manager.
- **Operator FDN**
  The treatment of incoming calls to Operator is decided according to "Operator FDN" setting of the tenant <Section 2.2 Tenant, "Operator FDN" in the Programming Guide>.
  – If the FDN for Operator Group is set as the destination of Extension Group or Incoming Group, calls by the feature number for Operator Call will arrive at the destination.
  – If it is set to "Blank," calls will arrive at the destination of Extension Group (Operator Group).
- If the FDN except for Operator Group is set, or if the FDN for Operator Group is set as the destination of Extension Group in other tenants, calls will arrive at the destination of Extension Group.
- An operator-seeking incoming call to the PDN of owner extension does not appear on the SDN button.
- A call to a single operator hunts for an idle extension as follows;

  <For Extension Group members>
  – in numerical order of the extension port physical numbers, starting at the extension following the last one called

  <For Incoming Group members>
  – in the order assigned in the Incoming Group
  It is programmable whether to start at the extension following the last one called or to always start at the first assigned extension by System Programming <Section 3.5 Incoming Group, "Search Mode" in the Programming Guide>.

Programming Guide References

- 1.4 Extension Port Assignment
  - Group No.
- 2.2 Tenant
  - Operator FDN
- 2.3 Numbering Plan
  - Operator Call
- 3.3 Extension Group
  - FDN
  - Tenant No.
  - [Overflow Setting] Destination – Day / Night
  - [Overflow Setting] Timer
  - Group Type
  - [Operator Setting] Ringing Type
  - [Operator Setting] Call Priority
- 3.5 Incoming Group
  - FDN
  - [Overflow Setting] Destination – Day / Night
  - [Overflow Setting] Timer
  - Group Type
  - Search Mode
  - [Operator Setting] Ringing Type
  - [Operator Setting] Call Priority
- 4.2 Trunk Line
  - Destination—Day/Night/Lunch/Break

Features Guide References

1.3 System Features

- Operator Group
- Manager Extension

User Manual References

- 4.3.53 Operator Call

PDN Call

Description

If the Extension 1001 has an SDN button which corresponds with the PDN button of the Extension 2001 (PDN owner), the Extension 1001 can call the Extension 2001 simply by pressing the associated SDN button twice.
The Extension 1001 can also transfer a call (on the CO / PDN) to the Extension 2001 with a simple operation.

Conditions

- **SDN button**
  An SDN button can be assigned to a flexible CO button on a DN type PT by Station, User or System Programming.
- **FWD / DND Override**
  The call originated by this feature overrides FWD / DND (Call Forwarding / Do Not Disturb) feature assigned on the PDN owner extension.
- A call made by this feature rings the destination PDN button immediately even if delayed ringing or no ring is set on that PDN button.

Programming Guide References

- 4.3 Extension Line
  - CO Key

Features Guide References

1.11 Transferring Features
- Ringing Transfer

1.16 Button Features
- Button, Line Access

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.9 PDN/SDN Button Delayed Ringing Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.60 PDN Call
- 4.3.68 Ringing Transfer

Secret Busy Override

Description

Allows the extension user to interrupt an existing call (either "between two inside parties" or "between an inside party and an outside party") without informing the other party.

Conditions

- **Class of Service (COS) programming**
  COS programming <Section 2.4 Class of Service (COS), "Busy Override" and "Secret Busy Override" in the Programming Guide> determines the extension users who can perform this feature.
- This feature does not work if "Executive Busy Override Deny" or "Data Line Security" is set at either one of two extensions or both of them.
- Party A and Party B are in conversation.
  This feature works as follows so that both party A and party B do not know that their conversation is being monitored by Party C:
  – The display and LED indicator at party A and party B show the status of a 2-party conversation.
  – A confirmation tone is not sent to either party A or party B even if it is enabled by System Programming.
  – The speech path from the party C to the party A and party B is not connected.
- If either one of two extensions or both of them is released from the call to perform other operations such as making a call or placing it on hold, this feature is terminated and then a reorder tone is sent to the calling extension.

Programming Guide References

- 2.3 Numbering Plan
  – Data Line Security Set / Cancel
  – Executive Busy Override Deny Set / Cancel
- 2.4 Class of Service (COS)
  – Busy Override
  – Busy Override Deny
  – Secret Busy Override
- 2.8 System Option
  – Confirmation tone for Override, Barge-in, Conference and Privacy Release

Features Guide References

1.9 Answering Features
- Executive Busy Override Deny

1.12 Conversation Features
- Data Line Security

User Manual References

- 4.3.69 Secret Busy Override

Toll Restriction

Description

Toll Restriction is a system programmable feature that, in conjunction with the assigned Class of Service, can prohibit certain extension users from placing unauthorized toll calls.

Every extension is programmed to belong to one of **96 Classes of Service.** Each Class of Service is programmed to have a toll restriction level for day mode and night mode respectively.

There are **eight toll restriction levels available.** Toll restriction level 1 is the highest level and the level 8 is the lowest. That is, level 1 allows all toll calls and levels 7 and 8 disallow all toll calls. Levels 2 through 6 are used to restrict calls by combining pre-programmed deny and excepted code tables.

TRS Deny Code Tables

An outgoing CO call made by an extension user with a toll restriction level between 2 and 6 is first checked against the selected TRS Deny Code Tables. If the leading digits of the dialed number (not including the CO line access code) are not found in the table, the call is made.
System Programming, Toll Restriction -TRS Deny is used to make up a TRS Deny Code Table for Levels 2 through 6 respectively.
Complete every table by storing numbers that are to be prohibited. These numbers are defined as deny codes. Up to 400 deny codes (max.10 digits for each) can be stored for TRS Levels 2 through 6.

TRS Exception Code Tables

These tables are used to override a programmed deny code. A call denied by the selected TRS Deny Code Tables is checked against the selected TRS Exception Code Tables, and if a match is found, the call is made.
System Programming, Toll Restriction - TRS Exception is used to make up a TRS Exception Code Table for Levels 2 through 6. Complete every table by storing numbers that are exceptions to the TRS deny codes. These numbers are defined as exception codes. Up to 200 exception codes (max.10 digits for each) can be stored for TRS Levels 2 through 6.

Applicable TRS Deny and TRS Exception Code Tables depend on the assigned toll restriction level of an extension as follows:

	TRS Deny Code Tables	TRS Exception Code Tables
Level 1	None	None
Level 2	Table for Level 2	Tables for Levels 2 - 6
Level 3	Tables for Levels 2 and 3	Tables for Levels 3 - 6
Level 4	Tables for Levels 2 to 4	Tables for Levels 4 - 6
Level 5	Tables for Levels 2 to 5	Tables for Levels 5 - 6
Level 6	Tables for Levels 2 to 6	Tables for Level 6
Level 7	None	None

	TRS Deny Code Tables	TRS Exception Code Tables
Level 8	None	None

[Explanation]

Level 1: allows all calls.

Level 2: denies codes stored in the TRS Deny Code Table for Level 2 except the codes stored in TRS Exception Code Tables for Levels 2 through 6.

Level 3: denies codes stored in the TRS Deny Code Tables for Levels 2 and 3 except the codes stored in TRS Exception Code Tables for Levels 3 through 6.

Level 4: denies codes stored in the TRS Deny Code Tables for Levels 2 through 4 except the codes stored in TRS Exception Code Tables for Levels 4 through 6.

Level 5: denies codes stored in the TRS Deny Code Tables for Levels 2 through 5 except the codes stored in TRS Exception Code Tables for Levels 5 and 6.

Level 6: denies codes stored in the TRS Deny Code Tables for Levels 2 through 6 except the codes stored in TRS Exception Code Table for Level 6.

Level 7: allows intercom calls only. Available only if COS "Call From TRS Level 7 Extension" is enabled.

Level 8: allows operator calls only.

Example of Toll Restriction programming

Here is an example to explain the procedures for Toll Restriction programming.

1. Determining the application

Determine the dialing numbers that should be denied for levels 2 through 6. (Levels 1, 7 and 8 are fixed and do not require programming.)

[Entry Example]

Level	TRS Deny Code	TRS Exception Code
2	011	None
3	011 976 1XXX976	None
4	011 976 1XXX976 0	None
5	011 976 1XXX976 0 411 1XXX555	None
6	011 976 1XXX976 0 411 1XXX555 1 X0 X1	911 1911 800 1800

Note: "X" substitutes a digit.

2. System Programming (Please refer to Programming Guide)

a) System - Class of Service, "TRS Level, Day / Night"
Assign a toll restriction level to each Class of Service (COS).

[Entry Example]

COS	Level (Day)	Level (Night)
1	1	6
2	2	6
:	:	:

COS	Level (Day)	Level (Night)
8	8	8

b) Toll Restriction - "TRS Deny Code"

Depending on the application, enter the TRS Deny codes in the associated tables. Numeric characters and the wild card character "X" can be used.

[Entry Example]

Level-2 TRS Deny Code Table	
Location	**Code**
001 : : 400	011

Level-3 TRS Deny Code Table	
Location	**Code**
001 002 : 400	976 1XXX976

Level-4 TRS Deny Code Table	
Location	**Code**
001 : : 400	0

Level-5 TRS Deny Code Table	
Location	**Code**
001 002 : 400	411 1XXX555

Level-6 TRS Deny Code Table	
Location	**Code**
001	1
002	X0
003	X1
:	
400	

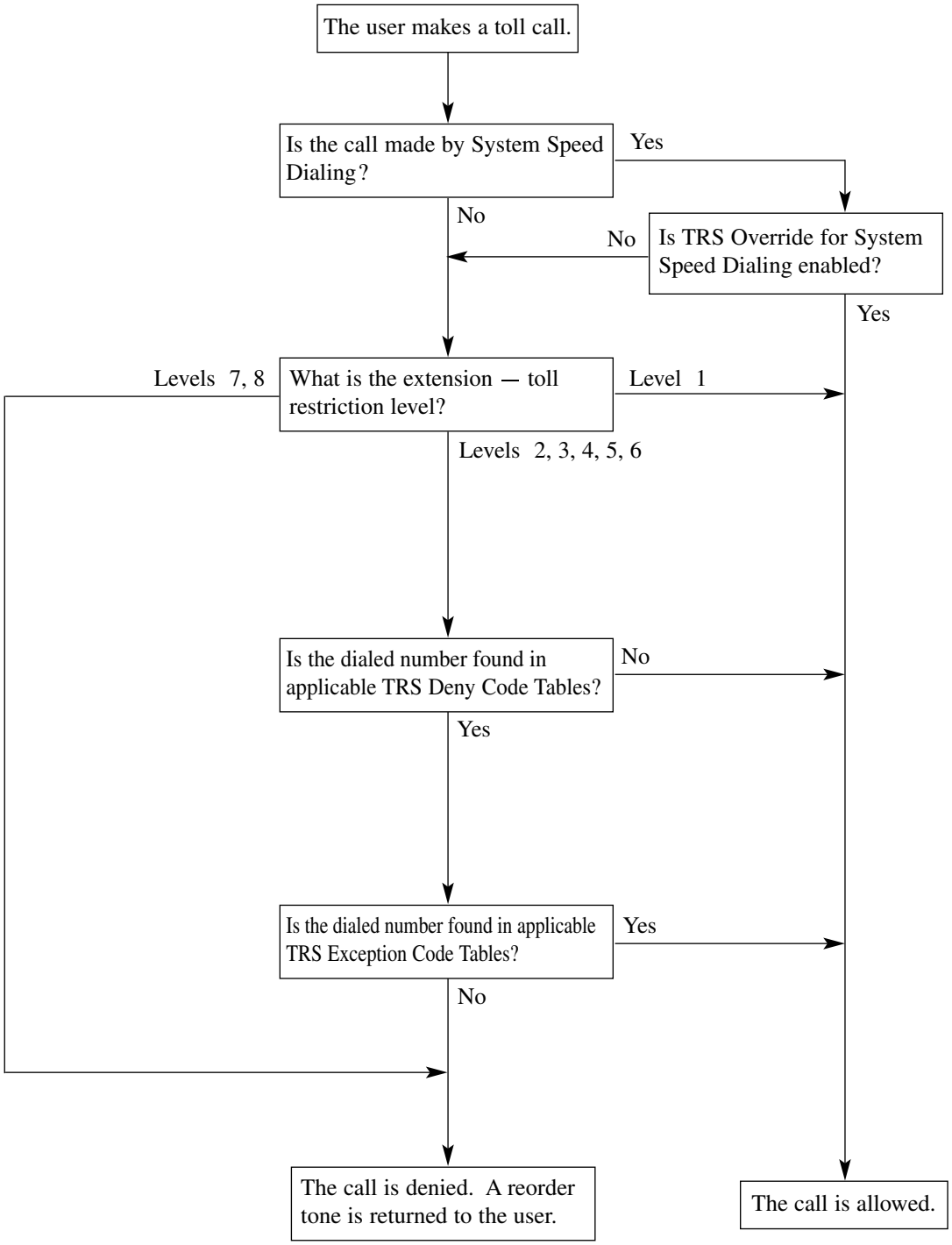
c) Toll Restriction - "TRS Exception Code"
Depending on the application, enter the exception codes in the associated tables. Numeric characters and the wild card character "X" can be used.

[Entry Example]

Level-6 TRS Exception Code Table	
Location	**Code**
001	911
002	1911
003	800
004	1800
:	
200	

[Explanation]
If the extension user's Toll Restriction Level is 6;
a) The extension user cannot make a call whose toll call number is "201," because the number whose second digit "0" is one of the TRS Deny Codes for Level 6.
b) The extension user can make a call whose toll call number is "800." Though the number whose second digit "0" is one of the TRS Deny Codes for Level 6, the number "800" is one of the TRS Exception Codes for Level 6. The Exception Codes override the Deny Codes.

Flow Chart of Toll Restriction


The user makes a toll call.
Is the call made by System Speed Dialing?
Yes
No
Is TRS Override for System Speed Dialing enabled?
No
Yes
What is the extension — toll restriction level?
Levels 7, 8
Level 1
Levels 2, 3, 4, 5, 6
Is the dialed number found in applicable TRS Deny Code Tables?
No
Yes
Is the dialed number found in applicable TRS Exception Code Tables?
Yes
No
The call is denied. A reorder tone is returned to the user.
The call is allowed.

Conditions

WARNING

The software contained in TRS feature to allow user access to the network must be upgraded to recognize newly established network area codes and exchange codes as they

are placed into service.
Failure to upgrade the premises PBXs or peripheral equipment to recognize the new codes as they are established will restrict the customer and the customer's employees from gaining access to the network and to these codes.
KEEP THE SOFTWARE UP-TO-DATE WITH THE LATEST DATA.

- Toll restriction checks are applied to the following:
  a) Automatic Route Selection (ARS)
  b) Account Code Entry
  c) Trunk Access, Idle
  d) Trunk Access, Trunk Group
  e) Trunk Access, Individual Trunk
  f) Special Carrier Access
  g) System Speed Dialing
- **Emergency Numbers**
  The Emergency numbers such as Police or Fire Department should be stored in System Programming <Section "5.4 Emergency Dial Code" in the Programming Guide> so that they are excepted from toll restriction.
- If a stored Host PBX access code or a stored carrier code is found in the dialed number, a toll restriction check starts for the succeeding telephone number.
- **Toll Restriction Override for System Speed Dialing**
  This feature can be activated or deactivated per tenant.
- **Checking Dial ⁎, # by Toll Restriction**
  It is determined by System Programming <Section 2.8 System Option, "7. Checking dial ⁎, # by toll restriction" in the Programming Guide> whether the "⁎" or "#" dialed by an extension user is to be checked or not in Toll Restriction procedure. This is useful to prevent unauthorized calls which could be possible through certain Central Offices' exchange system.

Programming Guide References

- 2.2 Tenant
  - System Speed Dial TRS Level Override
- 2.4 Class of Service (COS)
  - TRS Level – Day / Night
  - Call from TRS Level 7 Extension
  - Transferring CO dial tone (exempted from TRS)
- 2.5 System Timer
  - First Digit Time
  - Inter-digit Time
- 2.8 System Option
  - Checking dial *, # by toll restriction
  - First Digit Time-out Process
- 3.2 Trunk Group
  - PBX Access Code
- 4.3 Extension Line
  - [COS No.] Primary
  - [COS No.] Secondary
- 4.7 ISDN Extension Line
  - [COS No.] Primary
  - [COS No.] Secondary
- 5.4 Emergency Dial Code
- 5.7 Special Carrier Code
- 6.2 TRS Deny Code
- 6.3 TRS Exception Code

Features Guide References

1.6 Originating Features

- Toll Restriction for Special Carrier Access
- Toll Restriction Override by Account Code Entry
- Toll Restriction Override for System Speed Dialing

User Manual References

Not applicable.

Toll Restriction for Special Carrier Access

Description

If your system has access to multiple telephone companies, access to a specific company requires a carrier access code preceding the telephone number. Toll Restriction on these calls is activated by storing the carrier codes (maximum 100). If a stored carrier code is found in the dialed number, a toll restriction check starts for the succeeding telephone number.

Conditions

- **Automatic Pause Insertion**
  A carrier access code is followed by Automatic Pause Insertion. It is possible to select the pause time by System Programming.

Programming Guide References

- 3.2 Trunk Group
  - Pause Time
- 5.7 Special Carrier Code

Features Guide References

1.6 Originating Features

- Toll Restriction

User Manual References

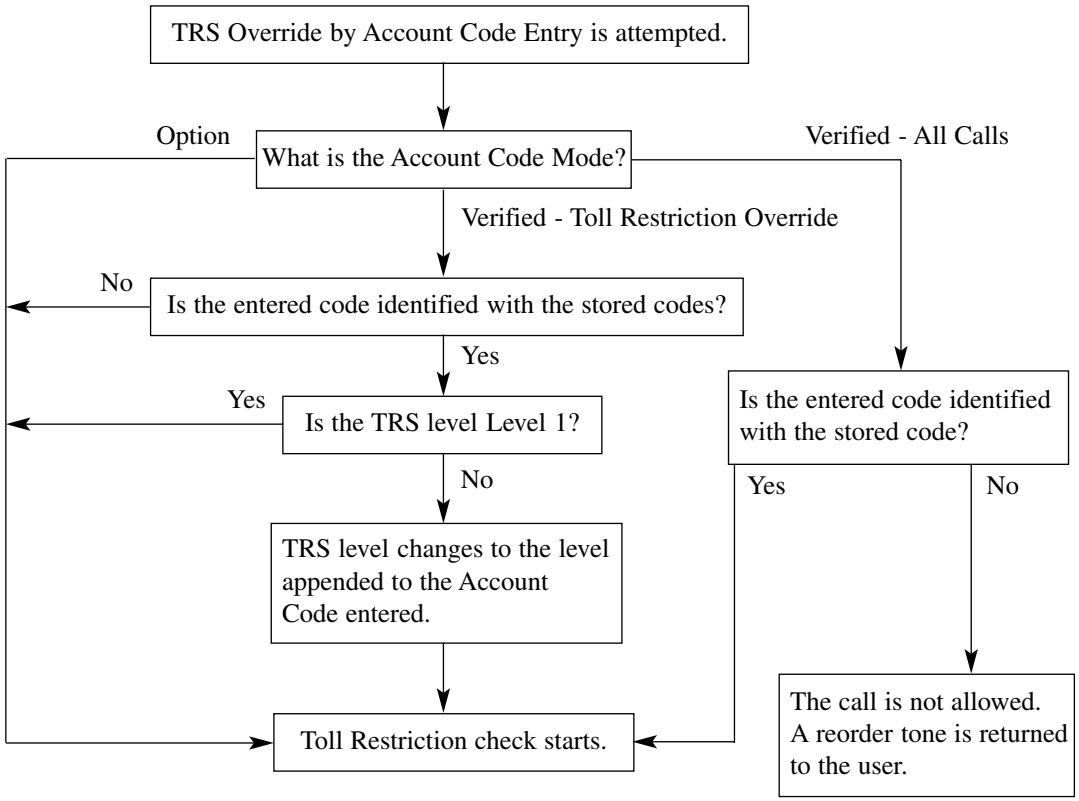
Not applicable.

Toll Restriction Override by Account Code Entry

Description

Allows the extension user to override toll restriction temporarily to make a toll call from a toll–restricted telephone. The extension user can carry out this feature by entering the appropriate account code before dialing the telephone number.

Flow Chart of TRS (Toll Restriction) Override Procedure by Account Code Entry


TRS Override by Account Code Entry is attempted.
What is the Account Code Mode?
Option
Verified - All Calls
Verified - Toll Restriction Override
No
Is the entered code identified with the stored codes?
Yes
Yes
Is the TRS level Level 1?
No
TRS level changes to the level appended to the Account Code entered.
Toll Restriction check starts.
Is the entered code identified with the stored code?
Yes
No
The call is not allowed. A reorder tone is returned to the user.

Conditions

- **Class of Service (COS) programming**
  This feature applies to the extension user whose Account Code Mode is set to "Verified–Toll Restriction Override" by COS Programming.
- **TRS Level for Account Code**
  Each account code has its own TRS level. The TRS level of the extension user is changed according to the account code entered. However, if the TRS level of the account code entered is lower than that of the extension, toll restriction check is performed against the TRS level of the extension. This feature applies to the extension whose TRS level is assigned as 2 through 6 by System Programming. Not applied to the extension with TRS level 1.
- Up to 1000 account codes per system / tenant can be programmed for Verified Account code operation. These are used for Toll Restriction Override.

- If the extension user does not enter any account code or enters an invalid account code, an ordinary toll restriction check is done.

Programming Guide References

- 2.3 Numbering Plan
  - Account Code
- 2.4 Class of Service (COS)
  - Account Code Mode
- 5.6 Account Code
  - Tenant No.
  - Entry No.
  - Code
  - TRS Level

Features Guide References

1.3 System Features
- Account Code Entry

1.6 Originating Features
- Toll Restriction

User Manual References

- 4.3.2 Account Code Entry
- 4.3.76 Toll Restriction Override by Account Code Entry

Toll Restriction Override for System Speed Dialing

Description

Allows the extension user to override Toll Restriction in System Speed Dialing. Normally, calls originated by System Speed Dialing are restricted depending on the extension's toll restriction level. Once this feature is activated, it permits all extension users to make System Speed Dialing calls without restriction.

Conditions

- **Tenant Service**
  This feature can be activated or deactivated on a tenant basis by System Programming.

Programming Guide References

- 2.2 Tenant
  - System Speed Dial TRS Level Override

Features Guide References

1.6 Originating Features
- Toll Restriction

1.7 Dialing Features
- System Speed Dialing

User Manual References

- 4.3.73 System Speed Dialing

Trunk Access

Description

There are the following four ways to access an idle CO line for making a call.

Type	Description	How to access
Idle	Selects an idle CO line automatically from the trunk groups assigned to the extension.	Dial the feature number for "Local CO Line Access / ARS" (default=9). Or press a Loop-CO (L-CO) Button. <PT only>
Direct	Selects an idle CO line by pressing an idle CO button directly.	Press an idle CO (S-CO, G-CO, L-CO) button. <PT only>
Individual Trunk	Select the desired CO line without dialing the line access number.	Press a Single-CO (S-CO) button. <PT only>
Trunk Group	Select an idle CO line from the desired trunk group assigned to the extension.	Dial the trunk group access number and a trunk group number. Or press a Group-CO (G-CO) button. <PT only>

Conditions

[General]

- **Class of Service (COS) programming**
  COS programming determines the trunk group available for each extension user <Section 2.4 Class of Service (COS), "Trunk Group Setting" in the Programming Guide>.
- All PTs in the system have one L-CO button by default.
- **Flexible CO Button Assignment**
  A flexible CO button can be assigned as an S-CO, G-CO or L-CO button by Station, User or System Programming as follows:

Button Type	Assignable parameters
Single-CO (S-CO)	A specific outside line is assigned.
Group-CO (G-CO)	A trunk group is assigned.
Loop-CO (L-CO)	All outside lines are assigned.

- After dialing the feature number or pressing the CO button, the extension user will hear one of the following tones:

  Dial tone: Indicates that an idle CO line is seized.

  ```
  xxxxx
  ```

  — is shown on the display. (xxxxx: trunk group physical number)

  Busy tone: Indicates that the selected CO line is busy.

  ```
    CO in use
  ```

  — is shown on the display.

  Reorder Tone:

  1) Indicates that the CO line the extension user has attempted to access is not assigned.

  ```
  CO Not Assigned
  ```

  — is shown on the display.

  2) Indicates that access to CO line is denied.

  ```
    Restricted
  ```

  — is shown on the display.

- `Restricted` may show on the display for the following reasons.
  — The extension has been locked by the owner **(Electronic Station Lockout)** or the Operator/Manager (Remote Station Lock Control).
  — The extension is restricted by the account code mode, "Verified – All Calls" or "Verified Toll Restriction Override" **(Account Code Entry)**.
  — The extension is restricted from making toll calls **(Toll Restrictions)**.
- The same CO line can be assigned to an S-CO button and a G-CO button.
- The same trunk group can be assigned to more than one G-CO button.
- Each PT can have more than one L-CO button.
- **Ringing Tone Selection**
  The Digital Proprietary Telephone (DPT) users can choose a desired ringing frequency for each S-CO, G-CO or L-CO button <Section "2.2.13 Ringing Tone Selection for CO Buttons" in the User Manual>.
- **Idle Line Preference – Outgoing (PT only)**
  If a CO button (S-CO, G-CO or L-CO) is selected in "Idle Line Preference – Outgoing" setting by Station or System Programming, the PT user can get an idle CO line simply by going off-hook.
- **Automatic Callback Busy (Camp-On)**
  If the CO line which the extension user tries to get is busy, the system will inform the user when the CO line becomes free.
- **Hands-free operation**
  When the extension user presses a CO (S-CO, G-CO or L-CO) button directly, the hands-free operation mode is established and the extension user can perform on-hook dialing.

[Idle]

- **Automatic Route Selection (ARS)**
  "Trunk Access, Idle" functions when Automatic Route Selection (ARS) is not activated. If ARS is activated by System Programming <Section 2.2 Tenant, "Automatic Route Selection" in the Programming Guide>, the least expensive route for the destination is selected automatically.
- **Local Hunt Sequence**
  An idle CO line is selected from the Trunk Group assigned to the extension.
  If multiple Trunk Groups are available, the Trunk Group hunting sequence is determined by System Programming <2.6 Local Hunt Sequence in the Programming Guide>.
- **For ICM type PT only**
  Dialing the CO line access code (default=9) selects a CO button on a PT according to the priority as follows:
  S-CO > G-CO > L-CO on a hunted Trunk Group

[Direct]

- By pressing an idle CO button, the hands-free operation mode is established and the extension user can perform On-Hook Dialing. There is no need to press the SP-PHONE button, MONITOR button or lift the handset.

[Individual Trunk]

- **ARS Override**
  If Automatic Route Selection (ARS) is activated, it is overridden by an outgoing call made by pressing the S-CO button.

[Trunk Group]

- **Line Hunting Order**
  An idle CO line in a Trunk Group is selected in one of the following three line hunting orders: Normal, Reverse (default), Sequential.
  This is determined by System Programming <Section 3.2 Trunk Group, "Line Hunting Order" in the Programming Guide>.
- **ARS Override**
  If Automatic Route Selection (ARS) is activated, it is overridden by an outgoing call made by pressing the G-CO button.

Programming Guide References

- 2.2 Tenant
  - Automatic Route Selection
- 2.3 Numbering Plan
  - Local CO Line Access / ARS
  - Trunk Group Access
- 2.4 Class of Service (COS)
  - Trunk Group Setting
- 2.6 Local Hunt Sequence
- 3.2 Trunk Group
  - Line Hunting Order
- 4.3 Extension Line
  - CO Key
  - [Preferred Line] Outgoing

Features Guide References

1.3 System Features

- Trunk Group

1.6 Originating Features

- Automatic Callback Busy (Camp-On)
- Automatic Route Selection (ARS)
- Trunk Connection Assignment—Outgoing

1.16 Button Features

- Button, Line Access

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.12 Preferred Line Assignment — Outgoing
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.54 Outward Dialing, Trunk Access

Trunk Connection Assignment—Outgoing

Description

Used to determine the Trunk Group which can be accessed by an extension user for making outside calls on a Class of Service basis. This feature is useful to prevent unauthorized toll calls.

Conditions

- When the extension user tries to make an outside call on a disallowed Trunk Group, a reorder tone is sent to indicate that the user cannot use it.
- **Night Service**
  Trunk Groups available for each Class of Service can be determined for Day and Night respectively.

Programming Guide References

- 2.4 Class of Service (COS)
  - Trunk Group Setting

Features Guide References

1.6 Originating Features

- Line Preference—Outgoing (Idle Line/No Line/Prime Line)
- Trunk Access

User Manual References

Not applicable.

Walking COS

Description

Allows an extension user to make a toll call at other lower level COS extensions (toll / outward restricted) by employing his own higher level COS temporarily.

Conditions

None

Programming Guide References

- 2.3 Numbering Plan
  - Walking COS
- 2.4 Class of Service (COS)
  - Trunk Group Setting
  - TRS Level – Day / Night
  - Account Code Mode
  - Switching Day / Night Mode
  - Call from TRS Level 7 Extension
  - Time Limit of Outside Calls
  - Transfer to CO
  - Call FWD to CO/TIE
  - Off-Hook Call Announcement (OHCA)
  - Call FWD Follow Me
  - Busy Override
  - DND Override
  - Busy Override Deny
  - Released Link Operation
  - Digits Restriction in CO Talk Mode
  - Automatic Hold
  - SDN COS
- 4.3 Extension Line
  - [COS No.] Primary
  - [COS No.] Secondary
- 4.7 ISDN Extension Line
  - [COS No.] Primary
  - [COS No.] Secondary
- 10.6 System Parameters
  - [Password] Walking COS

Features Guide References

1.3 System Features

- Class of Service (COS)

1.6 Originating Features

- Toll Restriction

User Manual References

- 4.3.84 Walking COS

1.7 Dialing Features

Automatic Station Release

Description

If the extension user fails to dial any digits within a specified time period after going off-hook, the user will be disconnected from the line after a reorder tone is sent. To get a line again, the user must go on-hook first and then go off-hook.

Conditions

- This function works in the following cases:
  When making a call
  (1) The first digit has not been dialed within 10 seconds.
  (2) After a digit is dialed, the next one is not dialed within 10 seconds (Intercom call only).

Programming Guide References

System Programming is not required.

Features Guide References

1.7 Dialing Features
- Pickup Dialing (Hot Line)

User Manual References

Not applicable.

Full One-Touch Dialing

Description

Allows the PT user to have simple access to a desired party or system feature by pressing just one button without first going off-hook.
Hands-free operation is automatically provided simply by pressing one of the following buttons.

- **One-Touch Dialing**
- **DSS** (both on PTs and DSS Consoles)
- **REDIAL**
- **SAVE**
- **Function (F1-F10)** (Special Display Features for KX-T7235 and KX-T7436 only).

Conditions

- This feature can be enabled or disabled by Station Programming.

Programming Guide References

- 4.3 Extension Line
  - CO Key
  - PF Key
- 4.4 DSS Console
  - DSS Key
  - PF Key

Features Guide References

1.7 Dialing Features
- One-Touch Dialing
- Redial

1.12 Conversation Features
- Hands-free Operation

1.16 Button Features
- Button, Direct Station Selection (DSS)

1.17 Display Features
- Call Directory

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.4 Full One-Touch Dialing Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.38 Full One-Touch Dialing
- 4.3.52 One-Touch Dialing
- 4.3.66 Redial

One-Touch Dialing

Description

One-Touch Dialing offers the PT user One-Touch access to a desired party or system feature by storing an extension number, telephone number, account code or a feature number (up to 24 digits) in a One-Touch Dialing button. The number of buttons available depends on the type of PT. One-Touch Dialing buttons can be programmed to flexible buttons: CO, DSS or PF (Programmable Feature).

Conditions

- **Combination dialing**
  Speed Dialing, One-Touch Dialing, manual dialing, Last Number Redial and Saved Number Redial can be used together in a combination.
- **Storing more than 25 digits**
  It is possible to store a number consisting of 25 digits or more by dividing it and storing it in two One-Touch Dialing buttons. In this case, a CO line access code should be stored in the first button.
- **Full One-Touch Dialing**
  If "Full One-Touch Dialing" is enabled, press the One-Touch Dialing button directly without going off-hook.
- To store the telephone number of an outside party, a line access code (default=9 or 801 through 848) must be stored as the leading digit.
- Any feature number can be stored in a One-Touch Dialing button.
  However, the feature numbers for "Speed Dialing – Station" and "Speed Dialing – Station Programming" do not function.

Programming Guide References

- 4.3 Extension Line
  - CO Key
  - PF Key
- 4.4 DSS Console
  - DSS Key
  - PF Key

Features Guide References

1.7 Dialing Features

- Full One-Touch Dialing

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.4 Full One-Touch Dialing Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.52 One-Touch Dialing
- 5.2.13 One-Touch Dialing Button (Assignment)
- 5.2.14 One-Touch Access Assignment for System Features
- 5.2.23 One-Touch Dialing
- 5.2.24 One-Touch Access for System Features

Pause Insertion, Automatic

Description

Used to insert a pre-assigned pausing time between the access code (CO line / host PBX / Centrex / Special Carrier) and dialed digits.

Conditions

- This feature requires previous programming of the access code (CO line / host PBX / Centrex / Special Carrier) as well as assignment of the pause duration.
- **This feature applies to:**
  This feature works for Speed Dialing, One-Touch Dialing, Last Number Redial, Saved Number Redial, Pickup Dialing and Call Forwarding — to Trunk.
- **Pause time (Manual)**
  Pressing the PAUSE button in dialing number inserts a pause for a pre-assigned time.

Programming Guide References

- 3.2 Trunk Group
  - Pause Time
  - PBX Access Code
- 5.7 Special Carrier Code
  - Code

Features Guide References

1.3 System Features
- Host PBX Access

1.6 Originating Features
- Toll Restriction

User Manual References

Not applicable.

Pickup Dialing (Hot Line)

Description

Allows the extension user to call a pre-determined extension or outside party automatically just by lifting the handset.
This feature is also known as Hot Line.

If the feature is activated and the extension user goes off-hook, a dial tone is generated for the waiting time and then dialing starts. During the waiting time, the extension user can make a call to another party, overriding the Pickup Dialing function.

Conditions

- To utilize this feature, an extension number or an outside telephone number (up to 24 digits) should be programmed beforehand.
- This feature works only when an extension user goes off-hook from on-hook status directly.
- A rotary dial telephone without the "#" button cannot program this feature. For programming the phone number, temporarily replace a rotary dial telephone with a touch-tone telephone which has the "#" button.
- This feature does not work if the extension user goes off-hook to answer an incoming call or retrieve a call on hold.
- This feature does not work if a message notification is left on the extension.
- For a PT with a PF 12 button, the number stored in the PF12 button is used for Pickup Dialing.
- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.

Programming Guide References

- 2.3 Numbering Plan
  - Pickup Dialing Program / Set / Cancel
- 2.5 System Timer
  - Pickup Dial Waiting Time
- 2.8 System Option
  - Special dial tone after setting feature
- 4.3 Extension Line
  - PF Key
  - [Pickup Dialing] Mode
  - [Pickup Dialing] Dial

Features Guide References

1.7 Dialing Features
- Automatic Station Release

User Manual References

- 4.3.62 Pickup Dialing (Hot Line)

Quick Dialing

Description

Allows the extension user to call a desired party by dialing a short code. Quick Dialing is convenient for room service calls in a hotel, for example.

Conditions

- To utilize this feature, an extension number or a telephone number should be stored beforehand either by User or System Programming.
- Up to eight quick dial numbers (up to 24 digits for each) can be stored in the system.
- Assign a feature number in program "Numbering Plan" first and then a quick dial number in program "Quick Dialing" in order for Quick Dialing to be effective.
  Example: To assign the extension number 1001 in quick dial number 3;
  a) Change or clear the feature numbers which have "3" in the first digit in program "Numbering Plan."
  b) Assign "3" in the selection number 63 (Quick dial location number 1) in program "Numbering Plan."
  c) Assign "1001" in location number 1 in program "Quick Dialing" (same location number as the quick dial location number 1 in program "Numbering Plan"). Now quick dial number 3 is available to call extension 1001.

Programming Guide References

- 2.3 Numbering Plan
  - Quick dial 1 - Quick dial 8
- 5.5 Quick Dialing

Features Guide References

None

User Manual References

- 3.2.9 [009] Quick Dial Number Set
- 4.3.65 Quick Dialing

Redial

Description

"Redial" feature can be categorized as the following two types.

Type	Description
Last Number	Saves the last telephone number dialed to a CO line or while hearing a busy tone and allows the extension user to dial the same number again.
Saved Number	Allows the PT user to save a telephone number while in conversation on a CO line or while hearing a busy tone and redial the number afterwards. The saved number can be redialed until another number is stored.

Conditions

[General]

- Up to 24 digits (excluding the CO line access code) can be stored and redialed.
- If "Full One-Touch Dialing" feature is enabled at the extension, there is no need to go off-hook, before pressing the REDIAL or SAVE button.

[Last Number]

- The memorized telephone number is replaced by a new one if at least one digit sent to a CO line is dialed. Dialing a CO line access code alone does not change the memorized number.

[Saved Number]

- **SAVE button**
  If the SAVE button is not provided on your PT, it is possible to assign a flexible button (CO, DSS, PF) to the SAVE button by Station, User or System Programming.

Programming Guide References

- 2.3 Numbering Plan
  - Redial
- 4.3 Extension Line
  - CO Key
  - PF Key
- 4.4 DSS Console
  - DSS Key
  - PF Key

Features Guide References

1.16 Button Features

- Button, Flexible

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.4 Full One-Touch Dialing Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.66 Redial

Station Speed Dialing

Description

Allows the extension user to store frequently dialed numbers (up to 24 digits) in order to place a call with abbreviated dialing for personal use. Up to 10 station speed dialing numbers appended with 1-digit station speed dialing code (0-9), can be stored in each telephone.

Conditions

- Station Speed Dialing numbers and names can be assigned by Station or System Programming. Station Speed Dialing name assignment is available for KX-T7431, KX-T7433, KX-T7436 and KX-T7235 only.
- Station Speed Dialing can be followed by manual dialing to supplement the dialed digits.

Programming Guide References

- 2.3 Numbering Plan
  - Speed Dialing - Station
  - Speed Dialing - Station Programming
- 4.3 Extension Line
  - CO Key
  - PF Key
- 4.4 DSS Console
  - DSS Key
  - PF Key

Features Guide References

1.7 Dialing Features

- Full One-Touch Dialing

User Manual References

- 2.2.17 Station Speed Dialing Number/Name Assignment [KX-T7235/KX-T7431/KX-T7433/KX-T7436 only]
- 4.3.72 Station Speed Dialing

System Speed Dialing

Description

The KX-TD500 system provides up to 1000 / tenant, 2000 / system abbreviated speed dial numbers (24-digit long for each) available to all extension users.

Conditions

- System Speed Dialing numbers and names can be programmed either by User or System Programming.
- **Toll Restriction Override for System Speed Dialing**
  Overriding Toll Restriction for System Speed Dialing can be activated or deactivated per tenant by System Programming.
- **Tenant Service**
  If "Tenant Service" is employed, up to 2000 Speed Dialing codes can be shared among each tenant under the condition of up to 1000 codes per tenant.
- **<For PT users>**
  Speed Dialing, One-Touch Dialing, manual dialing, Last Number Redial and Saved Number Redial can be used in combinations.
- **<For SLT users>**
  If a stored feature number includes "*" or "#," rotary or pulse SLTs cannot use it.
- You can import System Speed Dialing data by uploading the database file using the PC Maintenance Console. It enables you to register a lot of System Speed Dialing data easily. If System Speed Dialing entries already exist in your PBX, they are overwritten by uploading the file (caution!).
  The data file can be created by a text editor such as Notepad or Microsoft® Excel, and it must be in "CSV" (comma separated value) format. Each speed dial data item must be a single line, and fields (values) must be separated by a single comma. The extension of the filename must be "csv."

  <Format of the database file>

```
1,0,12345,ABC Company
2,10,789,,
2,9,,,
1,0,94771437,KME
```

<Meaning of each field>

Field #	Contents	Value Range
1	Tenant No.	1 - 8
2	Entry No.	0 - 999
3	Dial	Up to 24 digits consisting of 0-9, *, #, -, P, S or F
4	Name	Up to 10 characters consisting of 0-9, A-Z, a-z or the following marks:! # $ % & * ' ( ) + , - . / : ; < = > ? @

Notes

- "Dial" and "Name" can be omitted. If both fields are blank, the effect is to delete the entry in the PBX.
- There are limits to the number of entries per tenant and per system. Hence, if either limit is exceeded, data lines will be ignored and will not be registered in the PBX.
- CSV format file can be uploaded in the interactive processing mode only.

Programming Guide References

- 2.2 Tenant
  - System Speed Dialing Entries Max.
  - System Speed Dial TRS Level Override
- 2.3 Numbering Plan
  - Speed Dialing - System
- 5.2 System Speed Dialing
  - Name
  - Number

Features Guide References

1.6 Originating Features

- Toll Restriction Override for System Speed Dialing

1.17 Display Features

- Call Directory

User Manual References

- 3.2.2 [001] System Speed Dialing Number Set
- 3.2.3 [002] System Speed Dialing Name Set
- 4.3.73 System Speed Dialing
- 4.3.77 Toll Restriction Override for System Speed Dialing

1.8 Ringing Features

Do Not Disturb (DND)

Description

Allows the extension user to appear busy to an incoming CO or extension calls.

Conditions

- **DND does not work for the following calls:**
  — Hold Recall
  — Timed Reminder Alarm Tone
  — Calls directed by Intercept Routing
- **Do Not Disturb Override**
  An extension in DND mode can be called by other extension users who are allowed to override DND in their Class of Service.
- An extension user may have only one type of Call Forwarding / Do Not Disturb feature in effect at any time. If one of Call Forwarding / Do Not Disturb feature is assigned, another does not function but the assignment itself is preserved for future use. The extension user can choose either one by pressing the FWD / DND button while on-hook.
  In this case, pressing the button changes the settings as follows:

  The lighting patterns of the FWD / DND button are as follows:

  Off : Both functions are canceled.
  Red on : DND mode
  Red flash : FWD mode
  This setting can be changed by System Programming.
- **FWD / DND button**
  Regarding the PT without the FWD / DND button, it can be assigned to a flexible (CO, DSS, PF) button by Station, User or System Programming.
- A PT user in DND mode can answer a call by pressing a flashing button which shows the arrival of the call.
- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.

Programming Guide References

- 2.3 Numbering Plan
  - Call FWD - Do Not Disturb Set / Cancel
- 2.4 Class of Service (COS)
  - DND Override
- 2.8 System Option
  - Special dial tone after setting feature
  - FWD / DND lamp pattern
- 4.3 Extension Line
  - CO Key
  - PF Key
- 4.4 DSS Console
  - DSS Key
  - PF Key

Features Guide References

1.3 System Features
- Remote Station Feature Control

1.6 Originating Features
- Do Not Disturb (DND) Override

1.11 Transferring Features
- Call Forwarding

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.27 Do Not Disturb (DND)
- 4.3.28 Do Not Disturb (DND) Override
- 4.4.7 Remote DND (Do Not Disturb) Control

Log-In/Log-Out

Description

Allows the extension user to join (log-in) or leave (log-out) the group.
They can leave the group temporarily when they are away from their desks, to prevent calls being sent to their extensions.
They can return to the group when they are ready to answer calls.
This feature can be categorized as follows:

Log-In/Log-Out
Allows members (extension users) of an **Extension Group** (except Group Type: None) and **Phantom Extensions** to join (log-in) or leave (log-out) the group.

Group Log-In/Log-Out
Allows members (extension users) of an Incoming Group to join (group log-in) or leave (group log-out) the group.

- The lighting patterns and status of the Log-In/Log-Out (Group Log-In/Log-Out) button are shown below:

The lighting patterns and status of the Log-In/Log-Out (Group Log-In/Log-Out) button

Lighting pattern	Status
Off	Log-In (no calls)
Red On	Log-Out
Red slow flash (UCD Group only)*	Log-In (waiting calls)

* It is shown on the Log-In/Log-Out button of the Extension Group members or Group Log-In/Log-Out button corresponding with the Incoming Group.

Conditions

- **Log-In/Log-Out (Group Log-In/Log-Out) button**
  Log-In/Log-Out (Group Log-In/Log-Out) button can be assigned to a flexible CO button by Station, User or System Programming.
- When extensions are logged out, calls directed to the above mentioned group do not come in on their extension.
  However, calls directed to their individual extension (extension call, DIL 1:1, etc.) still ring at their extension.
- The extension user cannot leave the group (log-out), if at least one call is coming in on the group.
- **UCD Login Monitor**
  <For Extension Group members>
  Login/Logout status of the UCD Group members can be monitored by the extensions in the

same UCD Group through Busy Lamp Field of the corresponding DSS button. UCD Login Monitor is enabled or disabled by System Programming.
<For Incoming Group members>
Login/Logout status of the UCD Group members can be monitored by the extension specified as the Supervisor Extension through Busy Lamp Field of the corresponding DSS button.

- **All Logout**
  All extensions in the Extension Group or Incoming Group can be logged-out.
  This is determined by System Programming <Section 2.8 System Option, "Empty Group" in the Programming Guide>.
  If this feature is disabled by System Programming, the extension user cannot leave the group (log-out).
  At least one extension must be logged in.
  However, this does not apply to Auto-Logout of the UCD group extensions.

Programming Guide References

- 2.3 Numbering Plan
  - Login / Logout
  - Group Login / Logout
- 2.8 System Option
  - Empty Group
- 3.3 Extension Group
  - [UCD Setting] LOGIN Monitor
- 3.5 Incoming Group
  - [UCD Setting] Supervisor Extension
- 4.3 Extension Line
  - CO Key

Features Guide References

1.3 System Features

- Extension Group
- Incoming Group
- Phantom Extension

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.45 Log-In / Log-Out
- 4.3.80 UCD Login Monitor

Station Hunting

Description

If a called extension is busy, Station Hunting redirects the incoming call to an idle extension within the same Extension Group / Incoming Group.
Idle extensions are automatically searched for according to the pre-determined hunting type.

Extension Group

Hunting Type	Description
Circular	The extensions are searched in the order of the extension port physical numbers (Installing additional cards may change the order.) in a circular way, until an idle one is found.
Terminate	The extensions are searched in the order of the extension port physical numbers (Installing additional cards may change the order.) in a linear way, until an idle one is found, or the extension with the highest physical number in the group is reached.

Station Hunting Group can be made up by assigning the group type of an Extension Group as "Circular" or "Terminate." Up to 128 Station Hunting Groups, each consisting of more than one extension in the same tenant, can be created in the system.

Incoming Group

Hunting Type	Description
Terminate	The idle extension is searched in the order assigned in the Incoming Group, always starting at the first assigned extension.

Station Hunting Group can be made up by assigning the group type of an Incoming Group as "Terminate." Up to 96 Station Hunting Groups can be created in the system.

Conditions

- **What if all extensions in the group are busy?**
  If all of the searched extensions are busy, the system redirects the call to the overflow destination assigned by System Programming <Section 3.3 Extension Group / 3.5 Incoming Group, "[Overflow Setting] Destination – Day / Night" in the Programming Guide>.
- **FWD / DND Mode**
  If the called extension is in Call Forwarding or Do Not Disturb mode, Station Hunting skips the extension by default. This can be changed by System Programming <Section 3.3 Extension Group / 3.5 Incoming Group, "FWD / DND Mode" in the Programming Guide>.
- To leave the hunting group temporarily, use the Log-Out function.
  To re-join, use the Log-In function.

- **Message Waiting notification**
  A message waiting notification to an extension in the station hunting group is treated in the same manner as the ordinary call.

Programming Guide References

- 1.4 Extension Port Assignment
  - Group No.
- 2.3 Numbering Plan
  - Login / Logout
  - Group Login / Logout
- 3.3 Extension Group
  - FDN
  - Tenant No.
  - [Overflow Setting] Destination – Day / Night
  - Group Type
  - FWD / DND Mode
  - Extension Call Hunting
- 3.5 Incoming Group
  - FDN
  - [Overflow Setting] Destination – Day / Night
  - Group Type
  - FWD / DND Mode
- 4.2 Trunk Line
  - Destination—Day/Night/Lunch/Break
- 4.3 Extension Line
  - Group No.
- 4.7 ISDN Extension Line
  - Group No.

Features Guide References

1.3 System Features
- Extension Group
- Incoming Group

1.8 Ringing Features
- Log-In/Log-Out

User Manual References

Not applicable.

Timed Reminder (Wake-Up Call)

Description

Each telephone can be set to generate an alarm tone at a preset time as a reminder. When this feature is set, an alarm tone will ring for 30 seconds (default) at the programmed time.
Wake-up call
If a voice message is recorded beforehand, a wake-up message is heard instead of an alarm tone when an extension user goes off-hook.

This feature can be activated only once or everyday at a specified time.

Conditions

- **System Time**
  Be sure that the system clock is working correctly.
  System Time can be programmed either by User or System Programming.
- Setting a new time clears the preset time.
- **Timed Reminder Ringing Time**
  The alarm tone continues to ring the destination extension for 30 seconds by default. This period of time, ranging from 30 to 240 seconds, can be changed by System Programming <Section 2.5 System Timer, "Timed Reminder Ringing Time" in the Programming Guide>.
- **Timed Reminder Arrive Count**
  Timed Reminder ringing is repeated up to 3 times until the destination extension replies it by default. This number of times, ranging from 1 to 5 times, can be changed by System Programming <Section 2.5 System Timer, "Timed Reminder Arrive Count" in the Programming Guide>.
- **Timed Reminder Arrive Wait Time**
  The interval time between each Timed Reminder ringing is 60 seconds by default. This interval time, ranging from 20 to 240 seconds, can be changed by System Programming <Section 2.5 System Timer, "Timed Reminder Arrive Wait Time" in the Programming Guide>.
- **Hardware Requirements for a wake-up call**
  To utilize a wake-up call, DISA card (KX-T96191) is required.
- **OGM Recording**
  To utilize a wake-up call, set OGM Type of an OGM Group to "Wake-up."
  OGM Recording can be done only by the Manager or an Operator.
- **What if a wake-up message is not recorded?**
  An alarm tone is heard instead of a wake-up message.
- The number of extension users who can set this feature is not limited. However, the number of extension users who can hear the wake-up message at a time is limited to a maximum of 56 per DISA card.
  If the 57th or later extension user goes off-hook to hear the wake-up message, he will hear the alarm tone instead of the wake-up message.

- **Station Message Detail Recording (SMDR)**
  SMDR automatically records the detailed Timed Reminder information (date, time, tenant no., extension number, start / no answer / answer). It is programmable to be printed out when the Timed Reminder starts and the alarm is answered or not answered.

The print-out example is shown below.

Date	Time	T	Ext	CO	Dial Number	Ring Duration	Acct code	CC
22/02/00	01:31PM	1	E1017		Timed Reminder / Start			
22/02/00	01:31PM	1	E1017		Timed Reminder / No Answer			
22/02/00	01:31PM	1	E1017		Timed Reminder / Answer			

- To stop the alarm, lift the handset or, with a PT, press any button.
- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.
- **Alert Extension**
  An Alert extension can be assigned for Day / Night mode per tenant respectively by System Programming <Section 2.2 Tenant, "Alert Extension" in the Programming Guide>.
- **Alert button assignment**
  The Alert button can be assigned to a flexible CO button on the Alert extension.
- **Alert Ringing**
  If Timed Reminder (Wake-Up Call) is not responded by the guest, a Timed Reminder alert can be sent to the alert extension when the Alert button indicator on it is turned on (in red) by System Programming <Section 2.8 System Option, "Alert Ringing" in the Programming Guide>.

Installation Manual References

- 2.6.1 DISA Card (KX-T96191)

Programming Guide References

- 2.2 Tenant
  - Alert Extension – Day / Night
- 2.3 Numbering Plan
  - Timed Reminder Confirm / Set / Cancel
- 2.5 System Timer
  - Timed Reminder Ringing Time
  - Timed Reminder Arrive Count
  - Timed Reminder Arrive Wait Time
- 2.8 System Option
  - Special dial tone after setting feature
  - Alert Ringing
- 3.6 OGM Group
  - OGM Type
- 4.3 Extension Line
  - CO Key
- 10.4 SMDR
  - Print out Timed Reminder Information
- 10.7 System Time

Features Guide References

1.3 System Features

- Outgoing Message (OGM)
- Station Message Detail Recording (SMDR)

1.8 Ringing Features

- Timed Reminder, Remote (Wake-Up Call)

User Manual References

- 3.2.1 [000] Date and Time Set
- 4.3.74 Timed Reminder (Wake-Up Call)
- 4.4.6 Outgoing Message (OGM) Record/Playback

Timed Reminder, Remote (Wake-Up Call)

Description

Allows the Manager extension and the Operators to remotely set, cancel and confirm the wake–up call for an extension.

Conditions

- Only the latest time setting is valid at the extension whether it was set by the extension user (Timed Reminder) or by the Manager or an Operator (Timed Reminder, Remote).
- **Station Message Detail Recording (SMDR)**
  SMDR automatically records the detailed Timed Reminder information (date, time, tenant no., extension number, start / no answer / answer). It is programmable by System Programming to be printed out when the Timed Reminder starts and the alarm is answered or not answered. Please refer to "Station Message Detail Recording (SMDR)" of Section "1.3 System Features" for further information.

The print-out example is shown below.

Date	Time	T	Ext	CO	Dial Number	Ring Duration	Acct code	CC
22/02/00	01:31PM	1	E1017		Timed Reminder / Start			
22/02/00	01:31PM	1	E1017		Timed Reminder / No Answer			
22/02/00	01:31PM	1	E1017		Timed Reminder / Answer			

- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.
- **Timed Reminder Ringing Time**
  The alarm tone continues to ring the destination extension for 30 seconds by default. This period of time, ranging from 30 to 240 seconds, can be changed by System Programming <Section 2.5 System Timer, "Timed Reminder Ringing Time" in the Programming Guide>.
- **Timed Reminder Arrive Count**
  Timed Reminder ringing is repeated up to 3 times until the destination extension replies it by default. This number of times, ranging from 1 to 5 times, can be changed by System Programming <Section 2.5 System Timer, "Timed reminder Arrive Count" in the Programming Guide>.
- **Timed Reminder Arrive Wait Time**
  The interval time between each Timed Reminder ringing is 60 seconds by default. This interval time, ranging from 20 to 240 seconds, can be changed by System Programming <Section 2.5 System Timer, "Timed Reminder Arrive Wait Time" in the Programming Guide>.
- **Alert Extension**
  An Alert extension can be assigned for Day / Night mode per tenant respectively by System Programming <Section 2.2 Tenant, "Alert Extension" in the Programming Guide>.

- **Alert button assignment**
  The Alert button can be assigned to a flexible CO button on the Alert extension.
- **Alert Ringing**
  If Timed Reminder (Wake-Up Call) is not responded by the guest, a Timed Reminder alert can be sent to the alert extension when the Alert button indicator on it is turned on (in red) by System Programming <Section 2.8 System Option, "Alert Ringing" in the Programming Guide>.

Installation Manual References

- 2.6.1 DISA Card (KX-T96191)

Programming Guide References

- 2.2 Tenant
  - Alert Extension – Day / Night
- 2.3 Numbering Plan
  - Timed Reminder, Remote
- 2.5 System Timer
  - Timed Reminder Ringing Time
  - Timed Reminder Arrive Count
  - Timed Reminder Arrive Wait Time
- 2.8 System Option
  - Special dial tone after setting feature
  - Alert Ringing
- 3.6 OGM Group
  - OGM Type
- 4.3 Extension Line
  - CO Key
- 10.4 SMDR
  - Print out Timed Reminder Information
- 10.7 System Time

Features Guide References

1.3 System Features
- Outgoing Message (OGM)
- Station Message Detail Recording (SMDR)

1.8 Ringing Features
- Timed Reminder (Wake-Up Call)

User Manual References

- 3.2.1 [000] Date and Time Set
- 4.4.6 Outgoing Message (OGM) Record/Playback
- 4.4.11 Timed Reminder, Remote (Wake-Up Call)

1.9 Answering Features

ANSWER and RELEASE buttons Operation

Description

ANSWER and RELEASE buttons are useful when using the headset or in hands-free mode. With the ANSWER button, an extension user can answer all incoming calls. With the RELEASE button, an extension user can disconnect the line during or after a conversation or complete a Call Transfer.

Conditions

- **ANSWER and RELEASE Buttons Assignment**
  ANSWER and RELEASE buttons are provided as a fixed button on the KX-T7441 (DSS Console). For other PTs and DSS Consoles, these buttons can be assigned to a flexible (CO, DSS, PF) button by Station, User or System Programming.
- **What if the ANSWER button is pressed during a call?**
  If a new call comes in while engaged in the current call, the extension user can answer it simply by pressing the ANSWER button.
  In this case, the current call will be disconnected.
- **Call Answering Priorities**
  If the ANSWER button is pressed when two or more calls are ringing on an extension at a time, the extension will be connected to one of them according to the following priorities:
  (1) BSS (Busy Station Signaling) calls
  (2) Line Preference
  (3) In the order of arrival
- **Delayed Ringing or No Ringing Calls**
  If a call which comes in on the extension is not ringing (Delayed Ringing or No Ring), it cannot be answered by pressing the ANSWER button.

Programming Guide References

- 4.3 Extension Line
  - CO Key
  - PF Key
- 4.4 DSS Console
  - DSS Key
  - PF Key

Features Guide References

None

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.4 ANSWER and RELEASE buttons Operation
- 5.2.26 ANSWER and RELEASE Buttons Operation

Answering, Direct Trunk

Description

Allows the PT user to answer an incoming CO call simply by directly pressing a flashing CO button without lifting the handset or pressing the SP-PHONE / MONITOR button.
This feature permits the extension user to answer the desired CO call when multiple incoming CO calls are coming in on his extension.

Conditions

None

Programming Guide References

- 4.3 Extension Line
  - CO Key

Features Guide References

1.16 Button Features

- Button, Line Access

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.5 Answering, Direct Trunk
- 4.3.41 Hands-free Operation

Call Pickup

Description

Allows the extension user to answer a call (intercom, outside, doorphone) ringing at any other extension. The following types are available:

Feature Type	Picking up call type
Directed	A specific extension's call.
Group	A call within your extension group.
CO Line	An outside call.

Preventing other extensions from picking up calls ringing at his extension is also possible (**Call Pickup Deny**).

Conditions

[General]

- **Confirmation Tone**
  A confirmation tone is sent to the extension user who picked up the call. Eliminating the tone is programmable <Section 2.8 System Option, "9. Confirmation tone for Call Pickup, Paging, Paging-Answer, TAFAS-Answer, Hold Retrieve and Call Park Retrieve " in the Programming Guide>.
- This feature is not available to answer the following calls:
  –a call ringing at an extension in "Call Pickup Deny" mode
  –a call which shows the call arrival indication but is not ringing yet (Delayed Ringing).
- With the KX-T7431, KX-T7433, KX-T7436 or KX-T7235, you can execute this feature using the display operation.

[Directed]

- **Tenant Service**
  If "Tenant Service" is utilized, this feature is only available for the calls ringing on an extension within the same tenant.
- **Doorphone Call**
  Doorphone calls can be picked up from extensions that are not programmed to answer doorphone calls.
- **Call Waiting Call**
  This feature applies to a call waiting call.

[Group]

- **Group Call Pickup Priority:**
  Outside call > Transferred call > Extension call > Doorphone call

- If more than one call is ringing on an extension, Call Pickup to that extension works for the first arrived call.
- **Call Waiting Call**
  This feature does not apply to a call waiting call.

[CO Line]

- **Tenant Service**
  If "Tenant Service" is utilized, this feature is only available for an outside call ringing on an extension within the same tenant.
- If more than one CO call is ringing on an extension, Call Pickup starts with the first arrived CO call.
- **Call Waiting Call**
  This feature does not apply to a call waiting call.

[Deny]

- This feature does not apply to calls coming in on multiple extensions simultaneously.
- **Applicable calls**
  This feature applies to the following calls.

Call Type	
Outside calls	Direct In Line (DIL) 1:1; Direct Inward System Access (DISA); TIE
Intercom calls	Calls ringing on a single extension

- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.
- An extension user in "Call Pickup Deny" mode can pick up calls ringing at another extension.

Programming Guide References

- 2.3 Numbering Plan
  - CO Call Pickup
  - Group Call Pickup
  - Directed Call Pickup
  - Dial Call Pickup Deny Set / Cancel
- 2.8 System Option
  - Confirmation tone for Call Pickup, Paging, Paging- Answer, TAFAS-Answer, Hold Retrieve and Call Park Retrieve
  - Special dial tone after setting feature
- 3.3 Extension Group
- 4.3 Extension Line
  - Call Pickup Deny

Features Guide References

1.3 System Features

- Extension Group

User Manual References

- 4.3.13 Call Pickup
- 4.3.17 Call Waiting
- 4.5.9 KX-T7235 Display Features - System Feature Access Menu
- 4.5.12 KX-T7431 / KX-T7433 / KX-T7436 Display Features - System Feature Access Menu

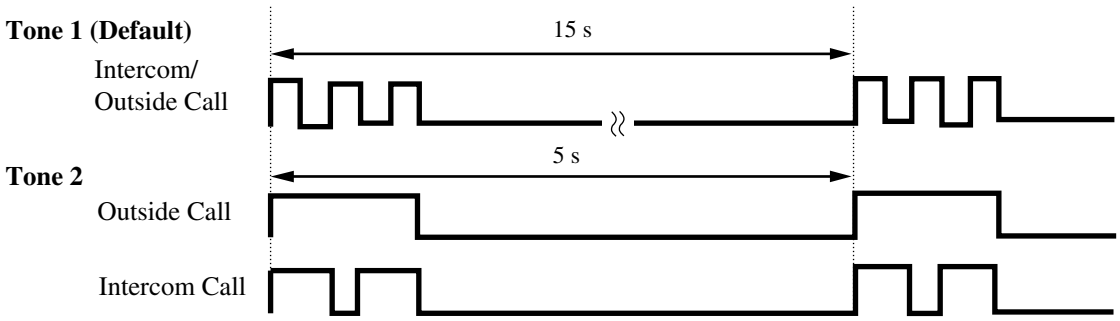
Call Waiting

Description

Used to inform a busy extension that another call is waiting. The busy extension can answer the second call by disconnecting the current call or placing it on hold. This feature can be activated or deactivated by dialing the appropriate feature number.

Conditions

- The Call Waiting tone is generated at the busy extension which is engaged in a call (extension, outside, conference), when an outside call or a doorphone call comes in on the busy extension or when another extension caller executes Busy Station Signaling (BSS) to the busy extension.
- **Call Waiting Tone Selection**
  For PT users, two types of call waiting tones (shown below) are provided to prevent them from missing the tone.
  A Call Waiting Tone type can be selected either by Station or System Programming.



- **BSS / OHCA / Whisper OHCA**
  If an extension user dials "1" while hearing a busy tone, BSS or OHCA or Whisper OHCA may be activated at the called extension.
  This is determined by the following conditions.

Calling extension	**Called extension**			
COS-OHCA assignment	Call Waiting setting			
	OFF	ON		
	0	1	2	3
Disable	———	BSS	BSS	BSS
Enable	———	BSS	OHCA[*1] → BSS	W-OHCA[*2] → OHCA → BSS

[*1] OHCA (Off-Hook Call Announcement) is activated when the called extension is KX-T7130, KX-T7235 or KX-T7436.
[*2] Whisper OHCA is activated when both calling and called extensions are using one of the KX-T7400 series PTs.

- **Data Line Security**
  Setting Data Line Security temporarily cancels Call Waiting which has been turned on by an extension user.
- BSS, OHCA and Whisper OHCA do not function, if the other extension is a DN type PT.
- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.

Programming Guide References

- 2.3 Numbering Plan
  - Call Waiting Set / Cancel
- 2.4 Class of Service (COS)
  - Off-Hook Call Announcement (OHCA)
- 2.8 System Option
  - Special dial tone after setting feature
- 4.3 Extension Line
  - Call Waiting Tone Type

Features Guide References

1.6 Originating Features

- Busy Station Signaling (BSS)
- Off-Hook Call Announcement (OHCA)
- Off-Hook Call Announcement (OHCA), Whisper

1.12 Conversation Features

- Data Line Security

User Manual References

- 2.2.2 Call Waiting Tone Type Assignment
- 4.3.8 Busy Station Signaling (BSS)
- 4.3.17 Call Waiting
- 4.3.25 Data Line Security
- 4.3.49 Off-Hook Call Announcement (OHCA)
- 4.3.50 Off-Hook Call Announcement (OHCA) —Whisper

Call Waiting from Central Office

Description

During a conversation with an outside party, a call waiting tone offered by the local Central Office informs the extension user of another incoming CO call that is waiting. He can answer the new call by placing the current call on hold.

Conditions

- **FLASH Button Operation**
  Pressing the FLASH button on a PT results in either sending Flash signal or disconnecting the current call.
  This is determined by System Programming <Section 2.8 System Option, "3. FLASH button operation while CO talking" and "4. FLASH button operation when "Don't release the trunk" is selected at #3" in the Programming Guide>.
- **Flash Time**
  The flash time must be assigned as required by the Central Office.
- **<PT>**
  FLASH button or the feature number is used to perform this feature.
- **<SLT>**
  Feature number is used to perform this feature. This feature does not function, if an SLT has a call on Consultation Hold.

Programming Guide References

- 2.3 Numbering Plan
  - External Feature Access
- 2.8 System Option
  - FLASH button operation while CO talking
  - FLASH button operation when "Don't release the trunk" is selected at #3
- 3.2 Trunk Group
  - Flash Time
  - Max. Dial No. after EFA Signal

Features Guide References

1.12 Conversation Features

- External Feature Access
- Flash

User Manual References

- 4.3.18 Call Waiting from Central Office
- 4.3.35 External Feature Access

Executive Busy Override Deny

Description

Allows the extension user to prevent his extension from being interrupted by "Executive Busy Override" from another extension user.

Conditions

- **Class of Service (COS) programming**
  COS programming <Section 2.4 Class of Service (COS), "Busy Override Deny" in the Programming Guide> determines the extension that can perform this feature.
- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.

Programming Guide References

- 2.3 Numbering Plan
  - Executive Busy Override Deny Set / Cancel
- 2.4 Class of Service (COS)
  - Busy Override Deny
- 2.8 System Option
  - Special dial tone after setting feature

Features Guide References

1.6 Originating Features

- Executive Busy Override

User Manual References

- 4.3.33 Executive Busy Override
- 4.3.34 Executive Busy Override Deny

Hands-free Answerback

Description

Allows the PT (with SP-PHONE) user to answer an intercom call and talk to the caller without lifting the handset.
When an intercom call comes in on an extension in Hands-free Answerback mode, the speakerphone is turned on automatically and hands-free conversation is established immediately after the called extension hears a beep tone and the caller hears a confirmation tone.

Conditions

- **AUTO ANSWER / MUTE Button**
  Hands-free answerback mode can be turned on / off by pressing the AUTO ANSWER / MUTE button.
- This feature does not work for the following calls:
  – CO calls
  – Doorphone calls
  – Calls to an Extension Group
  – Calls to an Incoming Group
  – Calls to a Phantom button
  – Calls from a VM (Voice Mail) extension
  – Calls ringing on an SDN button
- **Alternate Calling Ring / Voice Mode Override**
  Hands-free Answerback set on a telephone overrides "Alternate Calling Ring / Voice" preset on the extension; Hands-free conversation mode is established immediately after a confirmation tone is sent.
- It is programmable whether or not to answer the intercom call on Consultation Hold automatically by System Programming.

Programming Guide References

- 2.8 System Option
  – Auto Answer with held call

Features Guide References

1.6 Originating Features
- Alternate Calling—Ring/Voice

User Manual References

- 4.3.40 Hands-free Answerback

Line Preference—Incoming (No Line/Prime Line/ Ringing Line)

Description

A PT user can select the method used to answer incoming calls from the following three line preferences:

a) No Line Preference
No line is selected when an extension user goes off-hook to answer a call. He must press a desired Line Access button to answer an incoming call.

b) Prime Line Preference
An extension user can assign a prime line beforehand and answer a call ringing on that line simply by lifting the handset, even when multiple calls are ringing on his extension simultaneously.
A Prime Line can be selected from the following line access buttons.
<ICM type PT>
ICM, S-CO, G-CO, L-CO
<DN type PT>
PDN, SDN, S-CO, G-CO, L-CO

c) Ringing Line Preference (default)
An extension user can answer the call ringing at his extension simply by going off-hook.

Conditions

- Setting a new line preference feature cancels the previous setting.
- If "Prime Line Preference" is selected, an incoming call coming from a line other than the prime line cannot be answered just by going off-hook. To answer the call, the extension user must press the flashing button associated with the ringing line.
- **Delayed Ringing**
  If "Ringing Line Preference" is selected, going off-hook does not answer a line programmed for "no ring" even though there is an incoming call. Going off-hook during the delay time does not answer a line programmed for "delayed ringing."
- **<SLT>**
  An SLT is fixed to Ringing Line Preference mode.

Programming Guide References

- 4.3 Extension Line
  - CO Key
  - [Preferred Line] Incoming

Features Guide References

None

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.11 Preferred Line Assignment — Incoming
- 3.2.5 [005] Flexible CO Button Assignment

Live Call Screening (LCS)[*1]

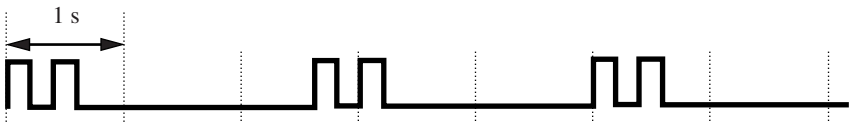
Description

This is one of the DPT Integration features.
Allows the PT user to monitor his voice mailbox while a caller is leaving a message in it. The extension user can intercept the recording in order to talk with the caller. The voice mailbox can be monitored in one of the following two ways:

Hands-Free Mode
When a caller starts to record a message, the caller's voice is heard through the built-in speaker of a PT automatically; the extension user can talk to the caller by going off-hook.

Private Mode
When a caller starts to record a message, a notification tone is emitted by the DPT. The extension user can monitor the caller's voice by going off-hook.

Notification Tone



To intercept the call in either Hands-Free or Private mode, press the LCS button.

Conditions

- **Call Waiting**
  If the extension user is busy on a call when a caller begins to leave a message, a call waiting tone is sent (if programmed beforehand). The extension user can put the current call on hold before accessing LCS.
- **LCS button / LCS Cancel button**
  LCS / LCS Cancel button can be assigned to a flexible (CO, DSS) button by Station, User or System Programming.
- **LCS Password Clear**
  To prevent unauthorized monitoring, a 3-digit password must be set by the extension user. If the extension user forgets his password, it can be cleared by the Manager or an Operator.
- **Recording mode**
  Each extension can be programmed to either stop or continue recording the conversation after intercepting the recording in order to talk with the caller.
- **LCS by an SLT (only in Private Mode)**
  A single line telephone, which is connected with a Proprietary Telephone in parallel, can also be used to monitor a recording message. Be sure that Live Call Screening has been activated on the connected proprietary telephone.
  This feature is useful when you are out with a portable handset of a cordless telephone (SLT). The handset sounds an alert tone to let you know that a message is being recorded. To intercept the call, flash the switchhook.

[*1] Available when the Digital Super Hybrid System is connected to a Digital Proprietary Telephone capable Panasonic Voice Processing System (one that supports Digital Proprietary Telephone [DPT] integration; e.g., KX-TVS100).

Programming Guide References

- 2.3 Numbering Plan
  - Live Call Screening
- 4.3 Extension Line
  - [LCS Setting] Status
  - [LCS Setting] Operation Mode
  - [LCS Setting] Recording Mode
  - [LCS Setting] LCS Password
  - CO Key
- 4.4 DSS Console
  - DSS Key

Features Guide References

1.3 System Features

- Integration, DPT

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.8 Live Call Screening (LCS) Mode Set
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.43 Live Call Screening (LCS)
- 4.4.4 Live Call Screening (LCS) Password Clear

1.10 Holding Features

Automatic Hold—For Hold

Description

Allows the PT user engaged in a call (extension or outside) to answer an incoming call (extension or outside) or to get a new line for making a call without losing the current call with a simple operation.
If this feature is enabled, the current call will be placed on hold automatically (without pressing the TRANSFER button) when the PT user presses the CO or DN (on which a call is coming in) or Answer button; or the PT user presses an idle CO or DN button to get a line for making a call.

Conditions

- This feature can be enabled/disabled on a system-wide basis by System Programming <Section 2.8 System Option, "26. Pressing CO/DN/Answer key operation in talking" in the Programming Guide>.
- If this feature is disabled, pressing another button during the call disconnects it.
- "Automatic Hold—For Hold" [system-wide basis] and "Automatic Hold—For Transfer" [COS basis] can be enabled/disabled independently.

Programming Guide References

- 2.8 System Option
  - Pressing CO / DN / Answer key operation in talking
- 2.4 Class of Service (COS)
  - Automatic Hold

Features Guide References

1.10 Holding Features
- Automatic Hold—For Transfer

User Manual References

Not applicable.

Automatic Hold—For Transfer

Description

Allows the PT user to transfer the call (intercom, outside) to the destination party with a simple operation, without first pressing the TRANSFER button.
If this feature is enabled, the current call is placed on consultation hold automatically when the PT user presses an idle CO, DN, DSS or Phantom button for transferring purpose.

This feature applies to the following buttons and operation:

DSS, S-CO, G-CO, L-CO, PDN, SDN, Phantom, direct dial

One-Touch Transfer
When the PT user presses a DSS or Phantom button, the call will be transferred to the extension associated with the pressed DSS or Phantom button immediately.
Please refer to "One-Touch Transfer" of Section "1.11 Transferring Features" for further information.

This feature is convenient for extension users, such as Operators, who handle a large volume of calls.

Conditions

- **Class of Service (COS) programming**
  COS programming <Section 2.4 Class of Service (COS), "Automatic Hold" in the Programming Guide> determines the extension that can perform this feature.
- If this feature is not allowed by COS programming, the current call will be disconnected by pressing an idle button or dialing the extension number during a call.
- The PT user can talk to the party on hold again by pressing the button associated with the call.
- "Automatic Hold—For Hold" [system-wide basis] and "Automatic Hold—For Transfer" [COS basis] can be enabled/disabled independently.

Programming Guide References

- 2.4 Class of Service (COS)
  - Automatic Hold

Features Guide References

1.10 Holding Features
- Automatic Hold—For Hold

1.11 Transferring Features
- One-Touch Transfer

User Manual References

Not applicable.

Call Hold

Description

Allows the extension user to put a call (intercom, outside) on hold **(Call Hold)**. The held call can be retrieved by the extension user who held it or by any other extension in the same tenant. Preventing other extension users from retrieving a held call is also possible for PT users **(Exclusive Call Hold)**. In this case, the call can only be retrieved from the extension on which it is held.

Conditions

- **Music on Hold**
  "Music on Hold" is sent to the party on hold, if available.
- **What if a call on (exclusive) hold is not retrieved?**
  If a call (intercom, outside) on hold is not retrieved in a specified period of time **(Hold Recall Time)**, ringing or an alarm tone is sent to the extension user who held the call as a reminder.
  Hold Recall Tone: If the extension user is on-hook and its speakerphone (PT only) is off, the phone will ring.
  Hold Alarm Tone: If the extension user is engaged in a call when the Hold Recall Time expires, an alarm tone is sent from the built-in speaker of a PT or from the handset receiver of an SLT at 15-second intervals.
  In this case, "Call Waiting" feature should be set at the extension beforehand.
- After Hold Recall or Hold Alarm Tone is emitted, the held call can be retrieved from any extension even if it is held in Exclusive Call Hold.
- It is possible to disable the Hold Recall tone by System Programming <Section 2.5 System Timer, "Hold Recall Time" in the Programming Guide>.
- **Automatic Disconnection**
  If an inside / outside call put on hold is not retrieved within 30 minutes, it is disconnected automatically.
- **The number of calls that can be put on (exclusive) hold at an extension**
  The number of calls that can be held on an extension at a time differs depending on the telephone type as follows:
  Intercom call
  – <ICM type PT>: One, <SLT>: One (Not available)
  – <DN type PT>: as many intercom calls as the number of DN (PDN, SDN) buttons on it.
  Outside call
  – <ICM type PT>: as many outside calls as the number of CO buttons on it
  – <DN type PT>: as many outside calls as the number of CO buttons and DN buttons on it
  – <SLT>: One (Not available)
- An SLT user can hold only one call, either an intercom or outside, at a time. To hold multiple calls, use the Call Park feature.
- **Tenant Service**
  If "Tenant Service" is utilized, retrieving a held call (intercom, outside) is only available within the same tenant.

- **Confirmation Tone**
  A confirmation tone is sent to the extension user who retrieved the held call, when it is retrieved by dialing the feature number.
  This tone can be eliminated by System Programming <Section 2.8 System Option, "9. Confirmation tone for Call Pickup, Paging, Paging – Answer, TAFAS – Answer, Hold Retrieve and Call Park Retrieve" in the Programming Guide>.
- The extension user cannot retrieve the following calls.
  — Unattended Conference Calls
  — Calls held at the System Call Parking Area
  — Calls put on Exclusive Call Hold

Programming Guide References

- 2.2 Tenant
  - Music on Hold Source
- 2.3 Numbering Plan
  - Hold
  - Hold Retrieve - Station
  - Hold Retrieve - Trunk
  - Call Waiting Set / Cancel
- 2.5 System Timer
  - Hold Recall Time
- 2.8 System Option
  - Confirmation tone for Call Pickup, Paging, Paging- Answer, TAFAS-Answer, Hold Retrieve and Call Park Retrieve

Features Guide References

1.3 System Features
- Music on Hold

1.10 Holding Features
- Call Park

1.13 Audible Tone Features
- Hold Recall

User Manual References

- 4.3.11 Call Hold
- 4.3.17 Call Waiting

Call Park

Description

Allows the extension user to place a call on hold into a system parking area so that any extension user can retrieve the call. This releases the user from the parked call to perform other operations.

Conditions

- Up to 800 calls can be parked at the same time in the system.
- **Tenant Service**
  If "Tenant Service" is employed, each tenant can use up to 100 parking areas (00-99) independently.
- **Call Park Recall**
  If a parked call is not retrieved in a specific period of time, Call Park Recall rings back the extension who parked the call.
- **Automatic Disconnection**
  If a parked call is not retrieved in 30 minutes, it is automatically disconnected.
- **Confirmation Tone**
  A confirmation tone is sent to the extension user who retrieved the parked call. Eliminating the tone is programmable <Section 2.8 System Option, "9. Confirmation tone for Call Pickup, Paging, Paging-Answer, TAFAS Answer, Hold Retrieve and Call Park Retrieve" in the Programming Guide>.

Programming Guide References

- 2.3 Numbering Plan
  - Call Park / Call Park Retrieve
- 2.5 System Timer
  - Call Parking Recall Time
- 2.8 System Option
  - Confirmation tone for Call Pickup, Paging, Paging- Answer, TAFAS-Answer, Hold Retrieve and Call Park Retrieve

Features Guide References

1.12 Conversation Features

- Conference, 5-Party

User Manual References

- 4.3.12 Call Park
- 4.3.22 Conference, 5-Party

Call Splitting

Description

When there are two active calls on an extension, an extension user can talk either one of them alternately.

Conditions

- This feature does not work for the following calls:
  – Doorphone call
  – Paging

Programming Guide References

System Programming is not required.

Features Guide References

1.10 Holding Features
- Consultation Hold

1.12 Conversation Features
- Conference, 3-Party

User Manual References

- 4.3.11 Call Hold
- 4.3.15 Call Splitting

Consultation Hold

Description

Allows an extension user to place a call on hold temporarily on purpose to transfer it, to make a Conference call, or to perform Call Splitting.
A PT user can place a call on Consultation Hold by pressing TRANSFER or CONF button.
An SLT user can place a call on Consultation Hold by pressing the switchhook lightly only to transfer it.

Conditions

- The following calls cannot be placed on Consultation Hold.
  – Doorphone calls
  – Paging
- <ICM type PT>
  A new incoming call will not come in on the extension which has a call on Consultation Hold. The extension is regarded as busy.
- **Music on Hold**
  When a call (extension / outside) is placed on Consultation Hold, Music on Hold is sent to the caller, if available.
- **Hold Recall**
  If a call on hold is not retrieved in a specific period of time, Hold Recall starts.
- **Automatic Disconnection**
  If a call (extension / outside) placed on consultation hold is not retrieved in 30 minutes, it is disconnected automatically.

Programming Guide References

- 2.5 System Timer
  – Hold Recall Time
- 2.8 System Option
  – SLT On-hook with consulting held call

Features Guide References

1.3 System Features
- Music on Hold

1.10 Holding Features
- Call Splitting

1.11 Transferring Features
- Call Transfer

1.12 Conversation Features

- Conference, 3-Party
- Conference, 5-Party
- Conference, Unattended

User Manual References

Not applicable.

1.11 Transferring Features

Call Forwarding

Description

Allows you to have incoming calls to your extension forwarded to a specified destination. You may specify the circumstances under which your calls are forwarded. The following Call Forwarding features are available:

Type	Circumstance	Destination
All Calls	Any time regardless of the status of your extension.	A specified extension
Busy	When your extension is busy.	
No Answer	When you do not answer the call within a pre-determined time.	
Busy / No Answer	When your extension is busy or you do not answer the call within a pre-determined time.	
Follow Me	When you forget to set forwarding "All Calls" before you leave your desk, you can set the same function from the destination extension.	
To CO / TIE Line	Any time.	A specified outside party
No Answer to CO / TIE Line	When you do not answer the call within a pre-determined time.	

Conditions

[General]

- Types of calls which are forwarded by these features are:

	Call Type
Outside calls	Direct In Lines (DIL) 1:1; Direct Inward Dialing (DID); Direct Inward Dialing (DID) (ISDN); Direct Inward System Access (DISA); Intercept Routing; Multiple Directory Number (MDN); TIE; Transfer*

Call Type	
Intercom calls	Extension; Transfer*

- Items marked with "*" are not available with "Call Forwarding - No Answer to CO / TIE Line" feature.

- **Floating Station**
  A Floating Station cannot be programmed as the call forwarding destination.
- **Forwarded call is not forwarded furthermore**
  There can be only one stage of Call Forwarding. If a call is forwarded to an extension in Call Forwarding mode, the call is not forwarded furthermore.
- **Message Waiting notification**
  A message waiting notification is left on the Call Forwarding setting extension regardless of a type of Call Forwarding features except for "To CO / TIE Line" and "No Answer to CO / TIE Line."
- **Station Hunting**
  Station Hunting applies to calls forwarded to a busy extension in a Station Hunting group.
- An extension user may have only one type of Call Forwarding / Do Not Disturb feature in effect at any time. If one of Call Forwarding / Do Not Disturb feature is assigned, another does not function but the assignment itself is preserved for future use. The extension user can choose either one by pressing the FWD / DND button while on-hook.
  In this case, pressing the button changes the settings as follows:

  → DND → FWD → Off →

  The lighting patterns of the FWD / DND button are as follows:

  Off : Both functions are canceled.
  Red on : DND mode
  Red flash : FWD mode
  This setting can be changed by System Programming.

- **Station or User Programming mode**
  This feature functions even if the extension is in Station/User Programming mode.
- **Remote FWD (Call Forwarding) Cancel - Once**
  The Manager and the Operators can reach an extension that has set Call Forwarding.
- **FWD / DND button**
  Regarding the PT without the FWD / DND button, it can be assigned to a flexible (CO, DSS, PF) button by Station, User or System Programming.
- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.

[No Answer, Busy / No Answer]

- The number of rings before the call is forwarded is programmable <Section 2.5 System Timer / Section 4.3 Extension Line, "Call Forwarding – No Answer Time" in the Programming Guide>. If "0" is specified in Section 4.3 Extension Line, "Call Forwarding-No Answer Time" setting in Section 2.5 System Timer works.

[Follow Me]

- **Class of Service (COS) programming**
  COS programming <Section 2.4 Class of Service (COS), "Call FWD Follow Me" in the Programming Guide> determines the extension that can perform this feature.

[To CO / TIE Line]

- **Class of Service (COS) programming**
  COS programming <Section 2.4 Class of Service (COS), "Call FWD to CO / TIE" in the Programming Guide> determines the extension that can perform this feature.
- **Treatment of the forwarded call**
  Toll Restriction, Automatic Route Selection (ARS) and Account Code Entry requirements of the extension in Call Forwarding mode still apply to the call forwarded by this feature.
- If you are storing an account code, enter the account code and then the delimiter "99" before the line access code.
- **Extension-to-CO Line Call**
  If a call between an extension and an outside party is established by this feature, the call duration can be restricted depending on the setting of the system timer <Section 2.5 System Timer, "Extension-to-CO Line Call Duration Time" in the Programming Guide>.
- **Co-to-CO Line Call**
  If a call between two outside parties is established by this feature, the call duration is determined by System Programming <Section 2.5 System Timer, "CO-to-CO Line Call Duration Time" in the Programming Guide>.
  An alarm tone is sent to both outside parties 15 seconds before the time-out. The call is disconnected at the time-out.
- **Trunk-to-Trunk Connection**
  Before utilizing this feature, "Trunk to Trunk Restriction" should be enabled by System Programming.
- You can store the telephone number up to 24 digits. Valid digits are "0 through 9," "✳" and PAUSE. PAUSE can also be stored by dialing "✳✳."

[No Answer - to CO / TIE Line]

- The number of rings before the call is forwarded is programmable <Section 2.5 System Timer / Section 4.3 Extension Line, "Call Forwarding–No Answer Time" in the Programming Guide>. If "0" is specified in Section 4.3 Extension Line, "Call Forwarding-No Answer Time" setting in Section 2.5 System Timer works.
- **Class of Service (COS) programming**
  COS programming <Section 2.4 Class of Service (COS), "Call FWD to CO / TIE" in the Programming Guide> determines the extension that can perform this feature.

- **Treatment of the forwarded call**
  Toll Restriction, Automatic Route Selection (ARS) and Account Code Entry requirements of the extension in Call Forwarding mode still apply to the call forwarded by this feature.
- If you are storing an account code, enter the account code and then the delimiter "99" before the line access code.
- **Extension-to-CO Line Call**
  If a call between an extension and an outside party is established by this feature, the call duration can be restricted depending on the setting of the system timer <Section 2.5 System Timer, "Extension-to-CO Line Call Duration Time" in the Programming Guide>.
- **Co-to-CO Line Call**
  If a call between two outside parties is established by this feature, the call duration is determined by System Programming <Section 2.5 System Timer, "CO-to-CO Line Call Duration Time" in the Programming Guide>.
  An alarm tone is sent to both outside parties 15 seconds before the time-out.
  The call is disconnected at the time-out.
- **Trunk-to-Trunk Connection**
  Before utilizing this feature, "Trunk to Trunk Restriction" should be enabled by System Programming.
- You can store the telephone number up to 24 digits. Valid digits are "0 through 9," "✳" and PAUSE. PAUSE button can also be stored by dialing "✳✳."
- This feature does not apply to the unscreened transfer call.

Programming Guide References

- 2.3 Numbering Plan
  - Call FWD - Do Not Disturb Set / Cancel
- 2.4 Class of Service (COS)
  - Call FWD to CO/TIE
  - Time Limit of Outside Calls
  - Trunk Group Setting
  - Call FWD Follow Me
- 2.5 System Timer
  - Call Forwarding-No Answer Time
  - Extension-to-CO Line Call Duration Time
  - CO-to-CO Line Call Duration Time
- 2.7 Trunk to Trunk Restriction
- 2.8 System Option
  - Special dial tone after setting feature
  - FWD / DND lamp pattern
- 4.3 Extension Line
  - CO Key
  - PF Key
  - Call Forwarding-No Answer Time
- 4.4 DSS Console
  - DSS Key
  - PF Key

Features Guide References

1.3 System Features
- Limited Call Duration

3.1 TIE Line Features
- TIE Line and Outside (CO) Line Connection

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.9 Call Forwarding
- 4.3.27 Do Not Disturb (DND)
- 4.3.83 VPS Integration

Call Forwarding—All Calls to an Incoming Group

Description

Allows you to have all calls to an Incoming Group forwarded to the pre-assigned Incoming Group or Extension Group.

Conditions

- Types of calls which are forwarded by this feature are:

Call Type	
Outside calls	Direct Inward Dialing (DID) (ISDN); Direct In Lines (DIL); Direct Inward Dialing (DID); Direct Inward System Access (DISA); Intercept Routing; Multiple Directory Number (MDN); TIE; Transfer
Intercom calls	Extension; Transfer

- **Class of Service (COS) programming**
  COS programming <Section 2.4 Class of Service (COS), "Incoming Group FWD" in the Programming Guide> determines the extension that can perform this feature.
  The Call Forwarding setting extension varies depending on the following three modes:

  Disable:

  Disables this feature.

  Own Group(s):

  Enables forwarding all calls to other Incoming Groups or Extension Groups.
  Only its own group(s) can be set as the Call Forwarding setting extension.

  Any Group:

  Enables forwarding all calls to other Incoming Groups or Extension Groups.
  Any group can be set as the Call Forwarding setting extension.
- **Forwarded call is not forwarded furthermore**
  There can be only one stage of Call Forwarding. If a call is forwarded to an extension in Call Forwarding mode, the call is not forwarded furthermore.
- Group FWD button
  Group FWD button can be assigned to a flexible (CO, DSS) button by Station, User or System Programming.
- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option , "15. Special dial tone after setting feature" in the Programming Guide>.

- Assignable destination is FDN of Incoming Group or Extension Group.
  If "DIL 1:N" is specified in "Group Type" setting of Incoming Group, this feature does not work.
- Regarding the PT with the Group FWD button, if Incoming Group FWD feature is assigned to the PT extension, the Group FWD indicator lights in red.
- While setting, you can temporarily cancel this feature by pressing the Group FWD button. Pressing the Group FWD button alternates between setting and canceling the mode.
  The lighting patterns of the Group FWD button are as follows:

  Off: This feature is not set.

  Red on: Group FWD mode
- The Group FWD button cannot be used to store or cancel this feature.
  Please use the feature number for Group FWD instead.

Programming Guide References

- 2.3 Numbering Plan
  - Group FWD
- 2.4 Class of Service (COS)
  - Incoming Group FWD
- 2.8 System Option
  - Special dial tone after setting feature
- 4.3 Extension Line
  - CO Key
- 4.4 DSS Console
  - DSS Key

Features Guide References

None

User Manual References

- 4.3.10 Call Forwarding — All Calls to an Incoming Group
- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment

Call Transfer

Description

Allows the extension user to transfer a call (extension, CO, TIE) to another party.
The following types are available.

Feature Type		Transferring method
Screened	**to Extension**	Transfers a call to the extension or the external party after a voice announcement.
	to CO / TIE Line	
Unscreened	**to Extension**	Transfers a call to the extension or the external party without a voice announcement. While listening for the ringback tone after dialing the destination number, you can replace the handset.
	to CO / TIE Line	

Conditions

[General]

- **Music on Hold or Ringback Tone**
  If "Music on Hold" is enabled, music is sent to the caller while being transferred. It is programmable whether to send a ringback tone or "Music on Hold" to the caller <Section 2.8 System Option, "1. Sound source during transfer" in the Programming Guide>.

[Screened, Unscreened - To Extension]

- The DSS Console and the Proprietary Telephone user can hold an outside call and quickly transfer it to an extension by pressing the corresponding DSS button directly (**One-Touch Transfer by DSS Button**).
  However, it cannot be performed when there is another call on Consultation Hold.
  If One-Touch Transfer mode is disabled, the extension user transfers an outside call by pressing the DSS button followed by the TRANSFER button.
  (**Consultation Hold**: Established by pressing TRANSFER or CONF button. With a Single Line Telephone, it is established by pressing the switchhook lightly. it allows the extension user to place a call on hold temporarily to transfer it, make a Conference call, or perform Call Splitting.)

[Screened, Unscreened - To CO / TIE Line]

- **Class of Service (COS) programming**
  COS programming <Section 2.4 Class of Service (COS), "Transfer to CO" / "Transfer to TIE" in the Programming Guide> determines the extensions that can perform this feature.
- **CO-to-CO call**
  If a CO call is transferred to an outside party, "CO-to-CO call" is established and the call duration is restricted depending on the setting of the system timer <Section 2.5 System Timer, "CO-to-CO Line Call Duration Time" in the Programming Guide>.

Hold Recall tone:
Hold Recall tone is generated to the extension who transferred the call 50 seconds before the time-out.
Hold Alarm tone:
Hold Alarm tone is generated to both outside parties 15 seconds before the time-out. The call is disconnected at the time-out unless the extension user (who transferred the call) joins the CO-to-CO call to establish a conference call.

- **CO-to-TIE call**
  If a CO call is transferred to the destination party via TIE line, a CO-to-TIE call is established and the call duration is restricted depending on the setting of the system timer. <Section2.5 System Timer, "CO-to-CO Line Call Duration Time" in the Programming Guide>

[Unscreened - to Extension]

- **Transfer Recall Destination**
  If the call (either extension or outside) transferred to the destination party is not answered within a specified period of time <Section 2.5 System Timer, "Transfer Recall Time" in the Programming Guide>, it may ring an Operator Group extension instead of the extension who originally transferred it. This is determined by System Programming <Section 2.8 System Option, "6. Transfer recall destination" in the Programming Guide>.
- **Automatic Disconnection**
  If there is no answer for 30 minutes after "Transfer Recall" starts, the line will be disconnected.
- **Camp-on Transfer**
  When the transfer destination party is busy, the call is put in waiting status. If the destination party remains busy or does not answer the call within a specified period of time <Section 2.5 System Timer, "Transfer Recall Time" in the Programming Guide>, the call will ring back the extension who transferred the call or an Operator extension.
- **Ringing Pattern**
  A transferred call will ring following the regular ringing pattern depending on the type of call (extension or outside) being transferred.
- **Remote Administration**
  Any extension user can transfer a call to the Remote resource (Modem) for Remote Administration.
- A CO call can be transferred directly to a Uniform Call Distribution (UCD) group so that an idle extension is automatically hunted by UCD. If all extensions in a UCD group are busy, the incoming CO call will be handled by the UCD Time Table.
- During a call transfer to the Remote Resource (Modem), a confirmation tone is not emitted after dialing the FDN for the Remote Resource.

Programming Guide References

- 2.4 Class of Service (COS)
  - Trunk Group Setting
  - Transfer to CO
  - Transfer to TIE
  - Automatic Hold
- 2.5 System Timer
  - Transfer Recall Time
  - CO-to-CO Line Call Duration Time
- 2.8 System Option
  - Sound source during transfer
  - Transfer recall destination
  - Pressing DSS key operation in CO talking

Features Guide References

1.3 System Features
- Limited Call Duration
- Music on Hold
- Released Link Operation

1.10 Holding Features
- Automatic Hold—For Hold

1.11 Transferring Features
- One-Touch Transfer

1.13 Audible Tone Features
- Hold Recall

3.1 TIE Line Features
- TIE Line Service

User Manual References

- 4.3.16 Call Transfer

Intercept Routing

Description

Provides automatic redirection of incoming CO calls. There are the following two types of Intercept Routing:

Rerouting
Activated when an incoming CO call cannot be placed on the destination extension.

Intercept Routing-No Answer (IRNA)
Activated when an incoming CO call is not answered within a specified period of time (Intercept time).

Conditions

- **Intercept Routing applies to:**
  DIL, DISA, TAFAS, DID, DID (ISDN), TIE[*1], Call Forwarding, and Station Hunting.
- **IRNA destinations**
  The final destination of intercepted calls can be programmed for day and night modes individually.
  There are seven possible destinations:
  1) an extension
  2) an external pager
  3) a DISA outgoing message
  4) an Extension Group
  5) an Incoming Group (except DIL 1:N Group)
  6) a phantom extension
  7) an ISDN extension (except the wild card character "X")
- **Do Not Disturb**
  Even if the destination is in Do Not Disturb mode, it does not function and the call re-directed by Intercept Routing is placed there.
- IRNA destinations can be assigned either on an Extension Line basis or on a Trunk Group basis.
- If an outside call (DIL 1:N, TAFAS, etc.) is not directed to individual extension, the call is redirected to the intercept destination assigned on a Trunk Group basis, not on an Extension Line basis.
- If Intercept destination is not programmed on an Extension Line basis, the call is redirected to the Intercept destination assigned on a Trunk Group basis.
- If an outside call is routed to a Call Forwarding destination by Call Forwarding feature and then not answered within a specified period of time, the system redirects the call to the IRNA destination assigned by the Call Forwarding destination.
- When an outside call directed to an ISDN extension is not answered within a specified period of time, the call is redirected to an extension assigned on a Trunk Group basis.

[*1] Before utilizing this feature, "IRNA for TIE Line" should be enabled by System Programming.

Programming Guide References

- 2.5 System Timer
  - Intercept Time
  - DISA IRNA Time
- 3.2 Trunk Group
  - Intercept Destination – Day / Night
  - IRNA for TIE Line
- 4.3 Extension Line
  - Intercept Destination — Day / Night

Features Guide References

None

User Manual References

Not applicable.

One-Touch Transfer

Description

Allows the PT user to transfer the call to the destination extension simply by pressing the DSS (or Phantom) button. This eliminates the needs for pressing the TRANSFER button and dialing the destination extension number.
If this feature is enabled, the current call is placed on hold (Consultation Hold) automatically when the PT user presses an idle DSS (or Phantom) button for transferring purpose.
This feature is convenient for extension users, such as Operators, who handle a large volume of calls.

This feature can be categorized as follows:

One-Touch Transfer (by DSS or Phantom)
Allows the PT user to transfer the call (extension or outside) simply by pressing the DSS or Phantom button associated with the destination extension.

One-Touch Transfer (by DSS)
Allows the PT user to transfer the CO call simply by pressing the DSS button associated with the destination extension.

Conditions

[General]

- This feature does not work if the PT extension already has a call placed on Consultation Hold.
- If this feature is disabled by System Programming, performing "One-Touch Transfer" operation disconnects the current call.
- The PT user can talk to the party on hold again by pressing the button associated with that extension before the destination extension answers the call.

[One-Touch Transfer (by DSS or Phantom)]

- COS programming <Section 2.4 Class of Service (COS), "Automatic Hold" in the Programming Guide> determines the extension that can perform this feature.

[One-Touch Transfer (by DSS)]

- This feature can be enabled or disabled on a system-wide basis by System Programming <Section 2.8 System Option, "25. Pressing DSS key operation in CO talking>.

Programming Guide References

- 2.4 Class of Service (COS)
  - Automatic Hold
- 2.8 System Option
  - Pressing DSS key operation in CO talking

Features Guide References

1.10 Holding Features

- Automatic Hold—For Hold

User Manual References

- 4.3.16 Call Transfer
- 5.2.25 Call Transfer

Ringing Transfer

Description

If the Extension 1001 has an SDN button which corresponds with the PDN button of the Extension 2001 (PDN owner), the Extension 1001 can transfer the call on the SDN button to the Extension 2001 with a simple operation. This is called "Ringing Transfer."

Conditions

- **SDN button**
  SDN button can be assigned to a flexible CO button on a DN type PT by Station, User or System Programming.
- **FWD / DND Override**
  The call transferred by this feature overrides FWD (Call Forwarding) / DND (Do Not Disturb) feature assigned on the PDN owner extension.
- A call made by this feature rings the destination PDN button immediately even if delayed ringing or no ring has been set on that PDN button <Section "2.2.9 PDN/SDN Button Delayed Ringing Assignment">.
- If the owner extension is in the Station or User Programming mode, Ringing Transfer does not function.

Programming Guide References

- 4.3 Extension Line
  - CO Key

Features Guide References

None

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.9 PDN/SDN Button Delayed Ringing Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.68 Ringing Transfer

1.12 Conversation Features

Conference, 3-Party

Description

The system supports 3-party conference calls which include outside or inside parties or both. During a 2-party conversation, the extension user can add a third party to their conversation, thereby establishing a conference.

Conditions

- **Conference call arrangement**
  A conference call can be one of the following three arrangements:
  1-inside and 2-outside; 2-inside and 1-outside; and 3-inside.
- **Conference trunk**
  Up to eight conference calls are available at a time by default. If the optional TSW Conference Expansion card is installed, up to 64 conference calls are available simultaneously.
- **Executive Busy Override, Privacy Release**
  A 3-party call is also established by Executive Busy Override or Privacy Release.
- **Confirmation tone**
  When a 2-party call is changed to a 3-party conference call and vice versa, a confirmation tone is sent to all three parties. Eliminating the tone is programmable <Section 2.8 System Option, "8 Confirmation tone for Override, Barge-in, Conference and Privacy Release" in the Programming Guide>.
- **CONF (Conference) button**
  If a CONF button is not provided on a PT, it can be assigned to a flexible (CO, DSS, PF) button by Station, User or System Programming.
- **Call Splitting**
  During a 3-party conference call, the conference originator can talk to either one of other two parties alternately by pressing the TRANSFER button (for PT user) or flashing the switchhook (for SLT user). In this case, the PT user is connected with the latter party first and the SLT user is connected with the previous party first.
- **Released Link Operation**
  If "Released Link Operation" is enabled at an SLT <Section 2.4 Class of Service (COS), "Released Link Operation" in the Programming Guide>, a conference call cannot be established.

Programming Guide References

- 2.4 Class of Service (COS)
  - Released Link Operation
- 2.8 System Option
  - Confirmation tone for Override, Barge-in, Conference and Privacy Release
- 4.3 Extension Line
  - CO Key
  - PF Key
- 4.4 DSS Console
  - DSS Key
  - PF Key

Features Guide References

1.6 Originating Features

- Executive Busy Override

1.10 Holding Features

- Call Splitting

1.12 Conversation Features

- Conference, 5-Party
- Conference, Unattended
- Privacy Release

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.21 Conference, 3-Party
- 4.3.22 Conference, 5-Party
- 4.3.23 Conference, Unattended
- 4.3.33 Executive Busy Override
- 4.3.63 Privacy Release

Conference, 5-Party

Description

A PT user can originate a 5-party conference call which includes outside or inside parties or both.

Conditions

- Up to two 5-party conference calls can be held at a time in the system, even if TSW Conference Expansion card is installed on the TSW card.
- **Conference call arrangement**
  A 5-party conference call can include both inside and outside parties in any combination.
- **Conference trunk**
  At least three idle conference trunks are required to establish a 5-party conference call.
- **Executive Busy Override**
  Executive Busy Override does not function to the extension engaged in the 5-party conference call.
- **CONF (Conference) button**
  If a CONF (Conference) button is not provided on a PT, it can be assigned to a flexible (CO, DSS, PF) button by Station, User or System Programming.
- If the other party you called is in one of the following status.
  You can terminate the current call and call a new party by pressing the FLASH button.
  – the other party does not answer the call.
  – the other party refuses to join a Five-party conference all.
  – the other party is a Voice Mail extension.

Programming Guide References

- 2.3 Numbering Plan
  - Call Park / Call Park Retrieve
- 4.3 Extension Line
  - CO Key
  - PF Key
- 4.4 DSS Console
  - DSS Key
  - PF Key

Features Guide References

1.10 Holding Features
- Call Park

1.12 Conversation Features
- Conference, 3-Party

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.21 Conference, 3-Party
- 4.3.22 Conference, 5-Party

Conference, Unattended

Description

A PT user who originated a conference call with two outside parties can leave the conference for a while to allow the other two parties to continue conversation. This is called an Unattended Conference. The conference originator may return to the conference, if desired.

Conditions

- **Class of Service (COS) programming**
  An Unattended Conference cannot be established unless the extension is allowed to transfer a call to an outside party by COS programming <Section 2.4 Class of Service (COS), "Transfer to CO" in the Programming Guide>.
- **Limited call duration**
  The duration of an unattended conference is restricted by a system timer.
  Hold Recall tone:
  Hold Recall tone is sent to the extension user who left the conference 50 seconds before the time-out.
  Hold Alarm tone:
  An alarm tone is sent to both outside parties three times at 5-second interval 15 seconds before the time-out. The call is disconnected at the time-out unless the extension who originated the Unattended Conference returns to the call.
- **CONF (Conference) button**
  If a CONF button is not provided on a PT, it can be assigned to a flexible (CO, DSS, PF) button by Station, User or System Programming.

Programming Guide References

- 2.4 Class of Service (COS)
  - Trunk Group Setting
  - Transfer to CO
- 2.5 System Timer
  - CO-to-CO Line Call Duration Time
- 4.3 Extension Line
  - CO Key
  - PF Key
- 4.4 DSS Console
  - DSS Key
  - PF Key

Features Guide References

1.3 System Features
- Limited Call Duration

1.12 Conversation Features
- Conference, 3-Party

1.13 Audible Tone Features

- Hold Recall

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.21 Conference, 3-Party
- 4.3.23 Conference, Unattended

Data Line Security

Description

Once Data Line Security is set on the extension, communication between the extension and the other end is protected from any signal such as Call Waiting, Hold Recall and Executive Busy Override. Data equipment or a facsimile may be connected to an extension port so that the extension user can perform data communications. During communication, Data Line Security maintains secure data transmission against tones or interruptions from other extensions.

Conditions

- **Automatic Privacy**
  Assigning Data Line Security always offers conversation privacy unless Privacy Release is executed.
- If one extension in a conversation has set Data Line Security, it applies to the both extensions.
- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.

Programming Guide References

- 2.3 Numbering Plan
  - Data Line Security Set / Cancel
- 2.8 System Option
  - Special dial tone after setting feature
- 4.3 Extension Line
  - Data Line Mode

Features Guide References

1.9 Answering Features
- Call Waiting

User Manual References

- 4.3.17 Call Waiting
- 4.3.25 Data Line Security
- 4.3.33 Executive Busy Override
- 4.3.63 Privacy Release

Doorphone Call

Description

Doorphone provides a conversation between an extension user and a visitor at a door. When a visitor presses the doorphone button, pre-assigned destination extensions ring. The extension who answered the call can talk to the visitor. It is possible for any extension user to call a doorphone.

Conditions

- **Hardware Requirements**
  To utilize this feature, a DPH Card (KX-T96161) and a Doorphone are required. The System supports up to eight doorphones.
- **Doorphone Call Destination**
  It is necessary to program the extensions that can receive doorphone calls during day and night mode.
- **What if a doorphone call is not answered?**
  If not answered within 30 seconds, the call stops ringing and is canceled.
- **Unlocking the door opener**
  During a doorphone call, any extension user can unlock the door opener (user-supplied) from his extension by dialing "5" to let the visitor in.
- The extension user cannot hold and transfer the doorphone call.

Installation Manual References

- 2.7.3 DPH Card (KX-T96161)

Programming Guide References

- 2.3 Numbering Plan
  - Doorphone Call
- 2.5 System Timer
  - Door Opener Time
- 4.5 Doorphone
  - Destination – Day / Night

Features Guide References

1.3 System Features

- Door Opener

User Manual References

- 4.3.29 Doorphone Call

End-to-End DTMF Signaling (Tone Through)

Description

DTMF signaling is required for access to special network services offered by some telephone companies. This system allows the extension user to signal the other end using DTMF tones during an established call.

Conditions

- If the dial type of the line is assigned to DTMF, Tone Through mode is established automatically after the dialing sequence is finished and the call is established.
- **Pulse to Tone Conversion**
  If the dial type of the line is assigned to dial pulse, Tone Through mode is established after the dialing sequence is finished and the "✳#" buttons are pressed.
- **Tone Through button**
  This button can be assigned to a flexible button (CO, DSS) by Station, User or System Programming.
- **Automatic Hold**
  If Automatic Hold mode is enabled by System Programming, Tone Through button is required to perform End-to-End DTMF Signaling.
- Tone Through button is effective during a call between two extensions / extension to outside, or a conference call.

Programming Guide References

- 2.4 Class of Service (COS)
  - Automatic Hold
- 4.3 Extension Line
  - CO Key
- 4.4 DSS Console
  - DSS Key

Features Guide References

1.3 System Features
- Dial Type Selection

1.12 Conversation Features
- Pulse to Tone Conversion

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.32 End-to-End DTMF Signaling (Tone Through)

External Feature Access

Description

Allows the extension user to have access to the features of a host PBX, Centrex or Central Office, such as Call Waiting, etc. This is performed by putting the current party on hold and sending a flash signal to the other end during an outside call.

Conditions

- **FLASH Button Operation**
  Pressing the FLASH button on a PT results in either sending Flash signal or disconnecting the current call.
  This is determined by System Programming <Section 2.8 System Option, "3. FLASH button operation while CO talking" and "4. FLASH button operation when "Don't release the trunk" is selected at #3" in the Programming Guide>.
- **Flash Time**
  The flash time must be assigned as required by the Centrex, host PBX or CO line.
- **Memory Dialing**
  During outside calls, a FLASH stored in System Speed Dialing, Station Speed Dialing or One-Touch Dialing works as External Feature Access, not as Flash (Disconnect Signal) used to disconnect the calls.
- **<PT>**
  FLASH button or the feature number is used to perform this feature.
- **<SLT>**
  Feature number is used to perform this feature. This feature does not function, if an SLT has a call on Consultation Hold.

Programming Guide References

- 2.3 Numbering Plan
  - External Feature Access
- 2.8 System Option
  - FLASH button operation while CO talking
  - FLASH button operation when "Don't release the trunk" is selected at #3
- 3.2 Trunk Group
  - Flash Time
  - Max. Dial No. after EFA Signal

Features Guide References

1.3 System Features
- Host PBX Access

1.12 Conversation Features
- Flash

User Manual References

- 4.3.18 Call Waiting from Central Office
- 4.3.35 External Feature Access
- 4.3.51 Off-Hook Monitor

Flash

Description

The FLASH button is used to allow a PT user to disconnect the current call and originate another call without hanging up.

Conditions

- **Flash or External Feature Access**
  Pressing the FLASH button on a PT results in either sending Flash signal (External Feature Access) or disconnecting the current call (Flash). This is determined by System Programming (Please refer to Programming Guide References below).
- Pressing the FLASH button re-starts the conversation duration, outputs an SMDR record and checks toll restriction level again.

Programming Guide References

- 2.8 System Option
  - FLASH button operation while CO talking
  - FLASH button operation when "Don't release the trunk" is selected at #3
- 3.2 Trunk Group
  - Disconnecting Time

Features Guide References

1.12 Conversation Features

- External Feature Access

User Manual References

- 4.3.35 External Feature Access
- 4.3.37 Flash

Hands-free Operation

Description

Allows the PT user to dial and to talk to the other party without lifting the handset. Pressing an appropriate button provides hands-free mode.

Conditions

- This function can be utilized by pressing a button listed below when the SP-PHONE / MONITOR button indicator is off:
  – SP-PHONE button
  – MONITOR button
  – INTERCOM button
  – CO button
  – DN button
- The hands-free mode is canceled if nothing is dialed within 10 seconds.
- **PT with MONITOR button**
  The PT with MONITOR button can be used for hands-free dialing operations, etc., but cannot be used for a hands-free conversation.
- **Full One-Touch Dialing**
  A single press of a One-Touch Dialing button, DSS button, REDIAL button or a SAVE button also provides the hands-free mode if Full One-Touch Dialing is activated.

Programming Guide References

System Programming is not required.

Features Guide References

1.6 Originating Features
- Full One-Touch Dialing

User Manual References

- 4.3.38 Full One-Touch Dialing
- 4.3.41 Hands-free Operation

Off-Hook Monitor

Description

Allows a PT user on a handset call to let other people around him monitor the call by pressing the SP-PHONE button.

Conditions

- This feature is available for the following PT extensions only:
  KX-T7431, KX-T7433, KX-T7436
- If the SP-PHONE button is pressed during a handset call, either Off-Hook Monitor or SP-PHONE mode (hands-free mode) will be established. This is determined by System Programming <Section 2.8 System Option, "20. Off-hook Monitor" in the Programming Guide>.
- Making an OHCA call is not available if the other extension is in Off-Hook Monitor mode.

Programming Guide References

- 2.8 System Option
  - Off-hook Monitor

Features Guide References

1.12 Conversation Features

- Hands-free Operation

User Manual References

- 4.3.41 Hands-free Operation
- 4.3.51 Off-Hook Monitor

Privacy Release

Description

Allows the PT user to release Automatic Privacy for an existing call in order to establish a 3-party call. During a conversation with an outside party on a CO button, the extension user can allow another extension user to join in the existing call by pressing the CO button.

Conditions

- **Confirmation Tone**
  When a 2-party call is changed to a 3-party conference call and vice versa, a confirmation tone is sent to all three parties. Eliminating the tone is programmable <Section 2.8 System Option, "8. Confirmation tone for Override, Barge-in, Conference and Privacy Release" in the Programming Guide>.
- This feature overrides "Data Line Security" and "Executive Busy Override Deny."

Programming Guide References

- 2.8 System Option
  - Confirmation tone for Override, Barge-in, Conference and Privacy Release
- 4.3 Extension Line
  - CO Key

Features Guide References

1.9 Answering Features
- Executive Busy Override Deny

1.12 Conversation Features
- Conference, 3-Party
- Data Line Security
- Privacy, Automatic

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.21 Conference, 3-Party
- 4.3.63 Privacy Release

Privacy, Automatic

Description

By default all conversations established on CO lines, extension lines and doorphone lines have privacy activated, that is, an existing call is not interrupted by anyone.

Conditions

- **Privacy Release**
  Automatic privacy may be temporarily released to establish a 3-party conference call, either by "Executive Busy Override" or "Privacy Release."

Programming Guide References

System Programming is not required.

Features Guide References

1.6 Originating Features
- Executive Busy Override

1.12 Conversation Features
- Privacy Release

User Manual References

Not applicable.

Pulse to Tone Conversion

Description

Allows the extension user to change the dialing mode from pulse dial to tone dial (DTMF) temporarily during a call so that they can access special services which require tone dialing such as a computer-accessed long distance call.

Conditions

- This feature works only for CO lines set to Pulse Dialing mode.
- Dial Type Selection provides selection of a dial mode for each CO line.
- **DISA call**
  This feature is not available during a DISA call.
- Changing from tone to pulse is not possible.

Programming Guide References

- 4.2 Trunk Line
  - Dial Type

Features Guide References

1.3 System Features
- Dial Type Selection

User Manual References

- 4.3.64 Pulse to Tone Conversion

Two-Way Recording into the Voice Mail[*1]

Description

This is one of the DPT Integration features.
Allows the PT user to record the current telephone conversation into his own mailbox or another extension user's mailbox.

Note

- During the recording of Two-Way telephone conversations, inform the other party that the conversation is being recorded.

Conditions

- **Two-Way Record / Two-Way Transfer button**
  These buttons can be assigned to a flexible (CO, DSS) button by Station, User or System Programming.
- If all voice mail ports are busy, pressing the Two-Way Record button does not function and an alarm tone sounds.
- If all voice mail ports are busy, pressing the Two-Way Transfer button followed by an extension number sends an alarm tone.

Programming Guide References

- 4.3 Extension Line
  - CO Key
- 4.4 DSS Console
  - DSS Key

Features Guide References

1.3 System Features
- Integration, DPT

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.79 Two-Way Recording into the Voice Mail
- 5.2.19 Two-Way Record Button (Assignment)
- 5.2.20 Two-Way Transfer Button (Assignment)

[*1] Available when the Digital Super Hybrid System is connected to a Digital Proprietary Telephone capable Panasonic Voice Processing System (one that supports Digital Proprietary Telephone [DPT] integration; e.g., KX-TVS100).

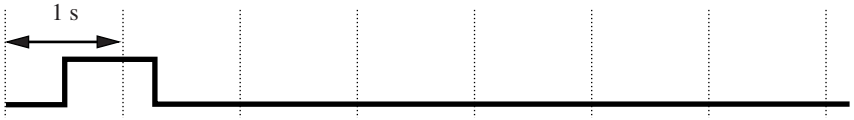
1.13 Audible Tone Features

Confirmation Tones

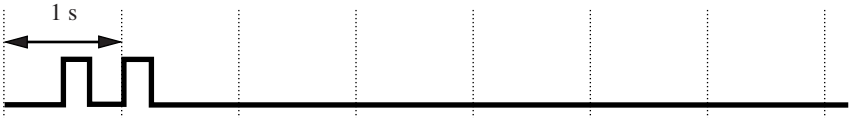
Description

A confirmation tone indicates that an action was accepted by the system, and the extension user can proceed to the next operation.
At the end of various operations, the extension user can confirm the success of the operation by hearing a confirmation tone.

Confirmation tone 1:
(a) Indicates that the new setting differs from the previous setting.
(b) Set or cancel the Electronic Station Lockout.



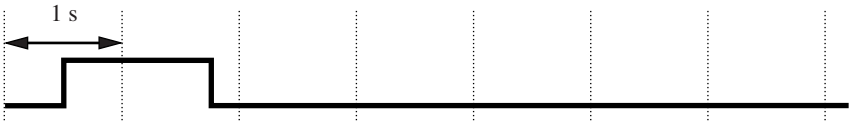
Confirmation tone 2:
(a) Indicates that the new setting is identical to the previous one.
(b) In addition, sent when various features are successfully performed or accessed. (e.g., Call Hold; Automatic Callback Busy)
(c) Sent when accessing external paging equipment. (e.g., Paging - All; Paging - External) A confirmation tone from external pagers can be enabled or disabled by System Programming.



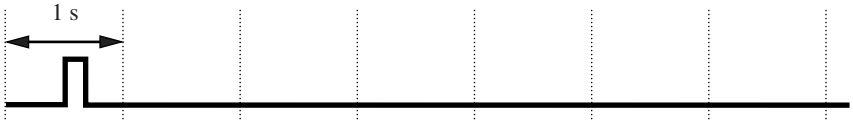
Confirmation tone 3:
Sent when a conversation is established just after dialing.
For example, when accessing the following features by the feature numbers:

- Call Park Retrieve
- Call Pickup
- Call Hold Retrieve
- Paging / Paging Answer
- TAFAS Answer

This tone can be eliminated by System Programming so that the user can start talking instantly.



Confirmation tone 4:
Sent when a 2-party call is changing to a 3-party call and vice versa. (These are caused by Executive Busy Override, Barge-in, 3-party conference call or Privacy Release.) It is possible to eliminate this tone by System Programming.



Conditions

- Confirmation Tone 1 and 2 are provided to reconfirm the assigned feature.

Programming Guide References

- 2.2 Tenant
  - External Paging Tone
  - Confirmation Tone for Station or External Paging
- 2.8 System Option
  - Confirmation tone for Override, Barge-in, Conference and Privacy Release
  - Confirmation tone for Call Pickup, Paging, Paging- Answer, TAFAS-Answer, Hold Retrieve and Call Park Retrieve

Features Guide References

None

User Manual References

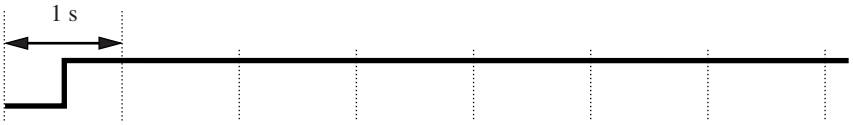
Not applicable.

Dial Tones, Distinctive

Description

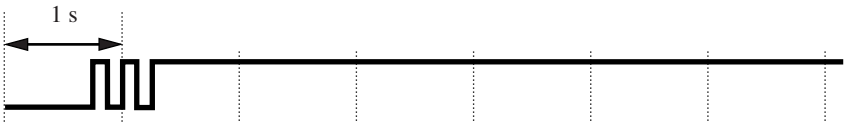
The following four types of dial tone patterns are provided to give information about features activated on the extension.

Dial tone 1: Normal dial tone. None of the features listed below are activated.

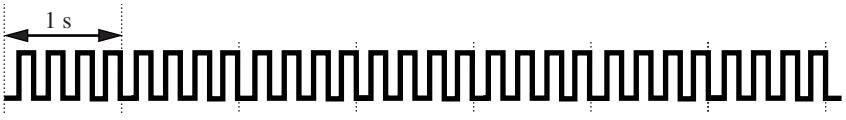


Dial tone 2: Emitted when any one or more of the features below are set.

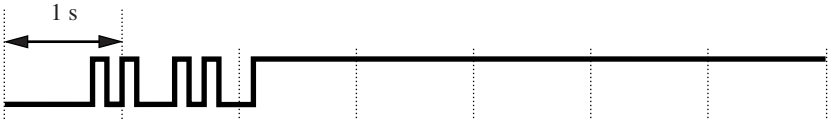
1. Absent Message Capability
2. Background Music (BGM)
3. Call Forwarding
4. Call Pickup Deny
5. Call Waiting
6. Data Line Security
7. Do Not Disturb (DND)
8. Electronic Station Lockout
9. Executive Busy Override Deny
10. Paging Deny
11. Pickup Dialing
12. Timed Reminder



Dial tone 3: Emitted when performing Account Code Entry or DISA User Code Entry. Also sounds when answering Timed Reminder call.



Dial tone 4: Emitted when messages are waiting for extension.



Conditions

None

Programming Guide References

- 2.8 System Option
  - Special dial tone after setting feature

Features Guide References

None

User Manual References

Not applicable.

Hold Recall

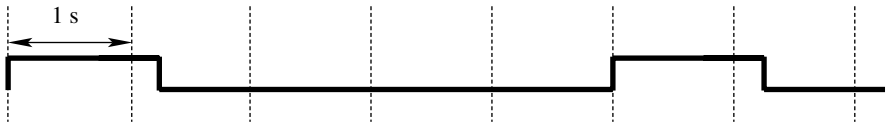
Description

Prevents a call on hold from being kept waiting longer than a pre-determined time. If the timer expires, ringing or an alarm tone is sent to the extension user who held the call as a reminder. If the extension is on-hook and its speakerphone (PT only) is off, the phone will ring **(Hold Recall Tone)**.
If the extension user is engaged in a call when the Hold Recall Time expires, an alarm tone is sent from the built-in speaker of a PT or from the handset of an SLT at 15-second intervals **(Hold Alarm Tone)**.
In this case, Call Waiting feature should be enabled at the extension beforehand.

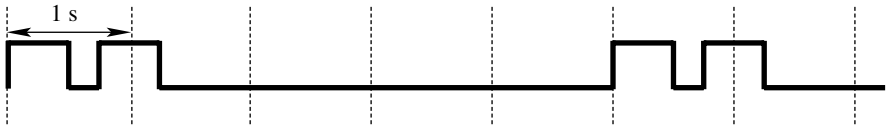
Conditions

- Hold Recall applies to the following calls:
  — Calls on Consultation Hold
  — Calls on Hold
  — Calls on Exclusive Hold
- **Automatic Disconnection**
  If an inside/outside call placed on hold is not retrieved within 30 minutes, it is automatically disconnected.
- Hold Recall feature can be disabled by System Programming <Section 2.5 System Timer, "Hold Recall Time" in the Programming Guide>.
- **Hold Recall Tone Pattern**
  Hold Recall Tone is emitted as follows:

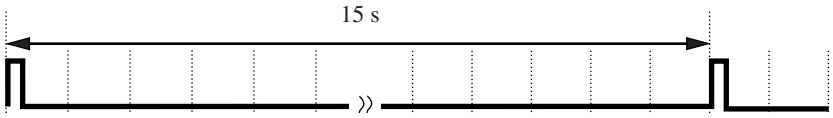
(1) Outside Call Hold Recall Tone



(2) Intercom Call Hold Recall Tone



- **Hold Alarm Tone Pattern**
  If "Call Waiting" is enabled at the extension where the call is held, an alarm tone is emitted as follows:



The display PT flashes the indication of the held party for five seconds at 15-second intervals synchronizing with the tone.

Programming Guide References

- 2.3 Numbering Plan
  - Call Waiting Set / Cancel
- 2.5 System Timer
  - Hold Recall Time

Features Guide References

1.10 Holding Features

- Call Hold

User Manual References

Not applicable.

Ringing Tone Selection

Description

Allows the DPT user to select one of eight ringer frequencies for each line access button (ICM, CO, DN). This is useful to distinguish the type of incoming calls by ringing.

Conditions

None

Programming Guide References

- 4.3 Extension Line
  - CO Key
- 4.4 DSS Console
  - DSS Key

Features Guide References

1.13 Audible Tone Features
- Ringing, Discriminating

1.16 Button Features
- Button, Line Access

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.13 Ringing Tone Selection for CO Buttons
- 2.2.14 Ringing Tone Selection for INTERCOM Button
- 3.2.5 [005] Flexible CO Button Assignment

Ringing, Delayed

Description

The extension can be set to ring immediately, delayed ringing, or no ringing.

Conditions

- **DIL 1:N Call**
  When a DIL 1:N call (an outside call directed to multiple extensions) comes in, all destination extensions ring immediately by default. This setting can be changed to delayed ringing or no ringing on each member of the DIL 1:N Group basis.
- <ICM type PT>
  At an ICM type PT, this feature does not apply to DISA or DIL 1:1 calls.
- <DN type PT>
  Line Ringing Selection is assignable on a DN button (PDN, SDN) basis. However, if Direct In Lines (DIL) 1:N is established, Line Ringing Selection is determined by incoming DIL 1:N call group setting.
  Delayed ringing assignment on PDN/SDN button <Section "2.2.9 PDN/SDN Button Delayed Ringing Assignment" in the User Manual> does not function for a call which comes in on a Ring Group extension or a Phantom extension.
- **Answering a no-ringing call**
  If delayed ringing or no ringing is assigned to an extension, the extension can answer an incoming call during no ring or the delay time by pressing the flashing button.

Programming Guide References

- 3.5 Incoming Group
  - Group Type
  - [Destinations] Ringing Type
- 4.3 Extension Line
  - CO Key

Features Guide References

1.3 System Features
- DIL 1:N Group

1.5 Attended Features
- Direct In Lines (DIL)

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.9 PDN/SDN Button Delayed Ringing Assignment
- 3.2.5 [005] Flexible CO Button Assignment

Ringing, Discriminating

Description

Allows the extension user to identify the incoming call by the ringing pattern (Please refer to Section "4 Tones / Ring Tones").

Conditions

- **Call Ringing Priority**
  When there are multiple incoming calls and the extension goes from off-hook to on-hook, the calls ring according to the following priority:

1. Consultation Hold Recall
2. An incoming call from a line in which the Prime Line Preference – Incoming function has been set (PT only)
3. Call Waiting
4. Incoming calls; Hold Recall; Transfer Recall; Unattended Conference Recall
5. Timed Reminder
6. Automatic Callback Busy

- **Prime Line Preference-Incoming**
  When multiple calls are ringing simultaneously at a PT on which "Prime Line Preference - Incoming" feature is assigned, the extension user can answer the call on the prime line simply by going off-hook.
- **Ringing Tone Selection**
  The DPT user can select a desired ringing tone type for CO, ICM and DN buttons.

Programming Guide References

System Programming is not required.

Features Guide References

1.13 Audible Tone Features
- Ringing Tone Selection

User Manual References

- 2.2.13 Ringing Tone Selection for CO Buttons

1.14 Paging Features

Paging

Description

Allows an extension user to make a voice announcement to many people at the same time. Your message is announced over the built-in speakers of Proprietary Telephones (PTs) or external speakers (External Pagers) or both.
The paged person can answer your page from a nearby telephone (**Paging Answer**).
Making and answering a page is possible from either a PT or SLT. You can do paging with a call on hold in order to transfer the call (**Paging and Transfer**).

Type	Paging method
All	Paged through all built-in speakers of the PTs and from all external pagers simultaneously.
External	Paged through all or specific external pagers.
Group	Paged through the built-in speakers of the PTs in all or specific paging groups.

Allows the PT user to deny receiving a paging announcement through the built-in speaker of his own PT (**Paging Deny**).

Conditions

[General]

- A confirmation tone is sent to extensions, when the page is made. Eliminating the tone is programmable <Section 2.2 Tenant, "Confirmation Tone for Station or External Paging" in the Programming Guide>.
- A confirmation tone is sent to extensions, when the page is answered. Eliminating the tone is programmable <Section 2.8 System Option, "9. Confirmation tone for Call Pickup, Paging, Paging-Answer, TAFAS-Answer, Hold Retrieve and Call Park Retrieve" in the Programming Guide>.

[All], [External]

- An external pager (user-supplied) must be connected to the System beforehand. Up to two external pagers can be connected to the KX-TD500 System.
- **External Paging Tone**
  External paging tone is emitted from external pagers, before the voice announcement. Eliminating the tone is programmable <Section 2.2 Tenant, "External Paging Tone" in the Programming Guide>.
- **External Paging Priority**
  External pagers can be used for TAFAS, Paging - External, or Background Music (BGM)

- External in this order.
For example, if Paging - External is overridden by TAFAS, a reorder tone is returned to the performer of the Paging - External. If BGM is overridden by another higher priority, it is interrupted and starts again when the higher priority is finished.

[All], [Group]

- A maximum of 16 station paging groups, each consisting of one or more extension groups, can be created in the system <Section 3.4 Paging Group in the Programming Guide>.
- A single Extension Group cannot belong to two or more different Paging Groups at a time.
- To page extensions, paged extensions must belong to some extension group(s), and this / these extension group(s) must belong to some paging group(s).
- A ringing or busy PT extension cannot receive a paging announcement.

[Deny]

- **Distinctive Dial Tone**
When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.

Installation Manual References

- 2.8.1 External Pager (Paging Equipment)

Programming Guide References

- 2.2 Tenant
  - External Paging Tone
  - Confirmation Tone for Station or External Paging
- 2.3 Numbering Plan
  - External Paging
  - External Paging Answer / TAFAS Answer
  - Station Paging
  - Station Paging Answer
  - Paging Deny Set / Cancel
- 2.8 System Option
  - Confirmation tone for Call Pickup, Paging, Paging- Answer, TAFAS-Answer, Hold Retrieve and Call Park Retrieve
  - Special dial tone after setting feature
- 3.4 Paging Group
  - Paging Group No.
  - Extension Group No.

Features Guide References

None

User Manual References

- 4.3.55 Paging
- 4.3.56 Paging — Answer
- 4.3.57 Paging Deny
- 4.3.58 Paging and Transfer

1.15 Proprietary Telephone Features

Background Music (BGM)

Description

Allows the PT user in on-hook status to listen to Background Music (BGM) from the built-in speaker of his PT.

Conditions

- **Hardware Requirements**
  A user-supplied external music source, such as a radio, is required to utilize this feature. Up to two music sources can be connected to the system.
- **Tenant Service**
  If "Tenant Service" is utilized, a music source for BGM is determined by System Programming on a tenant basis.
- **Turning on / off**
  This feature can be turned on / off by pressing "1" while the extension is on-hook. If it goes off-hook, BGM is suspended temporarily.
- **Changing Music Source**
  Before changing the music source (MUS1 or MUS2) by software control, you must first turn off the BGM at your extension; change the source; and then turn on the BGM again.
- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.

Installation Manual References

- 2.8.2 External Music Source

Programming Guide References

- 2.2 Tenant
  - BGM Source
- 2.8 System Option
  - Special dial tone after setting feature

Features Guide References

1.3 System Features

- Background Music (BGM)—External
- Music on Hold

User Manual References

- 4.3.7 Background Music (BGM)

DSS Console

Description

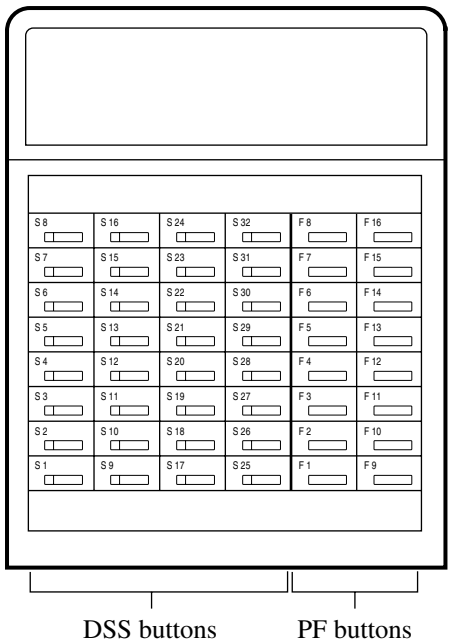
The DSS (Direct Station Selection) Console (KX-T7040, KX-T7240, KX-T7440, KX-T7441) provides DSS buttons for direct access to stations and busy lamp display, and PF (Programmable Feature) buttons.
The DSS Console must be programmed to work with a PT in pairs. System Programming assigns the extension port numbers of the DSS Console and its associated PT.
Up to 8 DSS Consoles can be connected to a PT.
In total, up to 64 DSS Consoles can be installed in the system.

The paired PT user can carry out the following operations simply by pressing buttons on the DSS Console which were pre-programmed as function buttons:

- Direct access to an extension (Direct Station Selection)
- Quick access to an outside party (One-Touch Dialing)
- Easy transfer of an outside call to an extension (The programmable One-Touch Transfer feature provides simplified operation.)
- Quick access to a system feature

A DSS Console has two types of buttons as shown below:

Example: DSS Console KX-T7240



DSS (Direct Station Selection) buttons: Used to call a corresponding extensions with One-Touch. Every button is provided with an indicator (Busy Lamp Field), which shows the current status of the corresponding extension as shown in the following table:

Busy Lamp Field Table

Light	Status of extension
Off	Idle
On	Busy[*1]
Flash	Logout[*2]

[*1] If the DSS button is corresponded with a DN type PT, the DSS indicator turns on when at least one PDN button on the corresponding DN type PT becomes busy.

[*2] If the extension corresponding with the DSS button is in "Logout" status and idle, the DSS indicator flashes in red.

To meet the user's various needs, DSS buttons can be changed to the other function buttons.

PF (Programmable Feature) buttons printed as F1 through F16: These buttons are provided without default setting. The paired PT user can program the buttons for the other function buttons.

Conditions

- Programming the DSS and PF buttons can be done only from the paired PT by Station Programming, or System Programming with Personal Computer.
- If the extension number assigned to a DSS button is changed to another number, the DSS button automatically follows the new number. (Re-programming is not necessary.)

Installation Manual References

- 2.4 Extension Cards

Programming Guide References

- 1.4 Extension Port Assignment
  - Attribute
  - DN
- 3.3 Extension Group
  - [UCD Setting] LOGIN Monitor
- 3.5 Incoming Group
  - [UCD Setting] Supervisor Extension
- 4.4 DSS Console
  - Paired Extension
  - DSS Key
  - PF Key

Features Guide References

1.1 System Expansion
- EXtra Device Port (XDP)

1.11 Transferring Features
- One-Touch Transfer

1.16 Button Features
- Button, Direct Station Selection (DSS)
- Button, Flexible

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 5 DSS Console Features

Handset Microphone Mute

Description

While on a handset call, the PT user (KX-T7400 series PT only) can turn off the handset microphone by pressing the AUTO ANSWER / MUTE button for privacy reasons.
If the Handset Microphone Mute mode is activated by the caller (= handset microphone is off), the other party cannot hear the caller's voice, but the caller can hear the other party's voice.

Conditions

- This feature is available for KX-T7400 series PT only.
- If AUTO ANSWER / MUTE or VOICE CALL / MUTE (KX-T7450 only) button is pressed during an OHCA call, Handset Microphone Mute mode will be turned on.
- If AUTO ANSWER / MUTE button is pressed in Hands-free mode, Microphone Mute mode will be turned on.

Programming Guide References

System Programming is not required.

Features Guide References

1.15 Proprietary Telephone Features
- Microphone Mute

User Manual References

- 4.3.39 Handset Microphone Mute
- 4.3.47 Microphone Mute

Handset/Headset Selection

Description

The system supports the use of optional headset on PTs.

Conditions

- Headset mode can be set by:
  [DPT]
  Station Programming
  [APT]
  HANDSET/HEADSET selector on the APT or on the handset or both
- "OHCA" is available on an extension in Headset mode.
- Please refer to the Operating Instructions of the Headset KX-T7090 for operation.

Programming Guide References

System Programming is not required.

Features Guide References

None

User Manual References

- 2.2.5 Handset / Headset Selection

Microphone Mute

Description

Allows the PT user to turn off the microphone for privacy reasons.

Conditions

- This is effective for the microphone only; only your voice will be muted during a hands-free conversation.
- The extension user in Microphone Mute mode can hear the other party's voice.
- This feature is available for the PT with AUTO ANSWER / MUTE button only.

Programming Guide References

System Programming is not required.

Features Guide References

1.15 Proprietary Telephone Features
- Handset Microphone Mute

User Manual References

- 4.3.39 Handset Microphone Mute
- 4.3.47 Microphone Mute

Station Program Clear

Description

Allows the extension user to cancel the following functions assigned to his extension with a single operation.

(a)	**Absent Message Capability** (The message set on the extension)
(b)	**Automatic Callback Busy**
(c)	**Background Music** that has been turned on
(d)	**Call Forwarding / Do Not Disturb (DND)**
(e)	**Call Log, Incoming**
(f)	**Call Pickup Deny**
(g)	**Call Waiting (BSS, OHCA, Whisper OHCA)**
(h)	**Data Line Security**
(i)	**Executive Busy Override Deny**
(j)	**Log-out**
(k)	**Message Waiting** (All the messages that have been left by other extension users)
(l)	**Paging Deny**
(m)	**Paralleled Telephone enabled**
(n)	**Pickup Dialing** (The stored telephone number will be removed.)
(o)	**Timed Reminder**
(p)	**Walking Station**

Conditions

None

Programming Guide References

- 2.3 Numbering Plan
  - Station Program Clear

Features Guide References

None

User Manual References

- 4.3.71 Station Program Clear

Station Programming

Description

Allows the PT user to customize the extension to his needs. The following are the programming items available:

For both APT and DPT:

- Call Waiting Tone Type Assignment
- Flexible Button Assignment
- Full One-Touch Dialing Assignment
- Intercom Alert Assignment
- Live Call Screening (LCS) Mode Set
- Preferred Line Assignment – Incoming / Outgoing
- Station Programming Data Default Set

For DPT only:

- Handset / Headset Selection
- Ringing Tone Selection for Line Access Buttons

For display PT only:

- Bilingual Display Selection
- Initial Display Selection
- Self–Extension Number Confirmation

For display DPT only:

- Station Speed Dialing Number / Name Assignment

For the Manager's or Operator's extension PT only:

- Call Log Incoming, Log Lock
- Live Call Screening Password Clear
- Remote Station Lock Control

Detailed information and programming instructions are described in Section "2 Station Programming" in the User Manual.

Conditions

- During Station Programming, the PT is treated as a busy extension.

Programming Guide References

System Programming is not required.

Features Guide References

None

User Manual References

- 2 Station Programming
- 4.4.3 Call Log Incoming, Log Lock
- 4.4.4 Live Call Screening (LCS) Password Clear
- 4.4.9 Remote Station Lock Control

Station Programming Data Default Set

Description

Allows the PT user to return all the following items programmed on the telephone to default setting.

Programming Items	Default
Bilingual Display Selection	English
Call Waiting Tone Type Assignment	Tone 1
Full One-Touch Dialing Assignment	On
Handset / Headset Selection	Handset
Initial Display Selection	Caller ID
Intercom Alert Assignment	Tone Call
Live Call Screening Mode Set	Hands-free
Preferred Line Assignment - Incoming	Ringing Line
Preferred Line Assignment - Outgoing	Intercom Line

Station Programming is used to set or cancel these items at individual telephones.

Conditions

None

Programming Guide References

System Programming is not required.

Features Guide References

1.15 Proprietary Telephone Features

- Station Programming

User Manual References

- 2.2.16 Station Programming Data Default Set

Volume Control—Speaker/Handset Receiver/Headset/ Ringer

Description

Allows the PT user to change the following as desired:

Handset receiver volume
Headset volume
Ringer volume
Speaker volume

Conditions

- The control method depends on the telephone type:

  [KX-T7400 series DPTs]
  – Rotate the Jog Dial in the desired direction.

  [KX-T7200 series DPTs]
  – Press the volume control button (UP ∧/DOWN ∨) to select a desired volume level. However, the ringer volume of KX-T7220 and KX-T7250 is selected with Ringer Volume Selector (OFF/LOW/HIGH).

  [APTs]
  – Slide the following levers located on the left side of the telephone.
  Volume Control (MIN - MAX)
  Handset Headset
  Volume Selector (NORMAL/MID/HIGH)
  Ringer Volume Selector (OFF/LOW/HIGH)

Programming Guide References

System Programming is not required.

Features Guide References

None

User Manual References

- 1.1.5 Initial Setting for KX-T7400 Series
- 1.1.6 Initial Setting for KX-T7200 Series

1.16 Button Features

Button, Direct Station Selection (DSS)

Description

DSS button permits the PT user one-touch access to other extension users.

Conditions

- A DSS button can be assigned to a flexible CO/DSS button on a PT by Station, User or System Programming.
- **Busy Lamp Field**
  Once a button is assigned as a DSS button, it provides Busy Lamp Field (BLF) status.

Programming Guide References

- 4.3 Extension Line
  - CO Key
- 4.4 DSS Console
  - DSS Key

Features Guide References

1.11 Transferring Features
- One-Touch Transfer

1.15 Proprietary Telephone Features
- DSS Console

1.17 Display Features
- Busy Lamp Field

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.16 Call Transfer
- 4.3.42 Inter Office Calling
- 5.2.6 Direct Station Selection (DSS) Button (Assignment)

Button, Flexible

Description

The use of Flexible Buttons on PT is determined by Station, User or System Programming. The following three types of Flexible Buttons are provided on PT or DSS Consoles or both:

- **Flexible CO buttons** (provided on all PTs)
- **Flexible DSS buttons** (provided on DSS Consoles)
- **Flexible PF (Programmable Feature) buttons**

Assignable features by Flexible Button type

↓ **Features to be assigned / Button** →	**CO (PT)**	**DSS (DSS)**	**PF (PT / DSS)**
Single-CO	✔	✔*1	
Group-CO	✔	✔*1	
Loop-CO	✔		
DSS (Direct Station Selection)	✔	✔	
Phantom	✔		
PDN (Primary Directory Number)	✔		
SDN (Secondary Directory Number)	✔		
ONE-TOUCH (One-Touch Dialing)	✔	✔	✔
MESSAGE (Owner Extension)	✔	✔	
MESSAGE-OTHER (Another/Phantom Extension)	✔*2	✔*3	
FWD / DND (Call Forwarding / Do Not Disturb)	✔	✔	✔
Group FWD	✔	✔	
SAVE (Saved Number Redial)	✔	✔	✔
ACCOUNT (Account Code Entry)	✔	✔	✔
CONF (Conference)	✔	✔	✔
VTR (Voice Mail Transfer)	✔	✔	✔
Log-In / Log-Out	✔		
Group Log-In / Log-Out	✔		

↓ Features to be assigned / Button →	CO (PT)	DSS (DSS)	PF (PT / DSS)
2WAY-REC (Two-Way Record)*4	✔	✔	
2WAY-TRAN (Two-Way Transfer)*4	✔	✔	
LCS (Live Call Screening)*4	✔	✔	
LCS (Live Call Screening) Cancel*4	✔	✔	
DAY / NIGHT (Day / Night Switch)	✔	✔	
Alarm	✔		
Answer	✔	✔	✔
Release	✔	✔	✔
Tone Through	✔	✔	
Alert	✔		

"✔" indicates that the feature is available.

*1 Available for monitoring the call activity only.

*2 Can only be assigned by User or System Programming.

*3 Can only be assigned by System Programming.

*4 Available when the Digital Super Hybrid System is connected to a Digital Proprietary Telephone capable Panasonic Voice Processing System (one that supports Digital Proprietary Telephone [DPT] integration; e.g., KX-TVS100).

Conditions

- **Station Programming mode**
  A PT in Station Programming mode is treated as a busy extension. CO buttons and DSS buttons on a PT in Station Programming mode do not show the indication of call activity.
- **Flexible CO buttons**
  Flexible CO buttons are provided on all types of PTs.

Programming Guide References

- 4.3 Extension Line
  - CO Key
  - PF Key
- 4.4 DSS Console
  - DSS Key
  - PF Key

Features Guide References

1.15 Proprietary Telephone Features

- DSS Console

1.16 Button Features

- Buttons on Proprietary Telephones and DSS Consoles

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment

Button, Line Access

Description

Used to get a line for making / answering a call. Line Access Buttons are provided on PTs only. They are categorized as follows:

Button Type		Description
Intercom (ICM)		Used to make or receive intercom calls, and to set or cancel various features. Available for an ICM type PT only.
CO	Single-CO (S-CO)	Used to get a specific CO line for making or receiving outside (CO, TIE) calls.
	Group-CO (G-CO)	A group of CO lines (Trunk Group) can be assigned to a flexible CO button as Group-CO (G-CO). Any incoming call from CO lines in the Trunk Group arrives at the G-CO button. To make an outside call, the extension user can get an idle CO line in the trunk group simply by pressing the G-CO button.
	Loop-CO (L-CO)	All CO lines in the system or in a tenant (if "Tenant Service" is utilized) can be assigned to a Flexible CO button as a Loop-CO (L-CO) button. An incoming CO call on any CO line arrives at the L-CO, unless there are S-CO or G-CO buttons associated with the line or unless the L-CO button is already in use. The PT user can get an idle CO line simply by pressing the L-CO button.
DN	Primary Directory Number (PDN)	Used to make or receive both intercom and outside (CO, TIE) calls, and to set or cancel various features. An extension which has at least one PDN button is called "DN type PT."
	Secondary Directory Number (SDN)	A copy of the other extension's PDN button. Acts as a proxy of the owner PDN button. SDN button reflects the status of the PDN button of the owner extension. Incoming calls to the PDN of owner extension also appears on the SDN button. Assignable for a DN type PT only.

All PTs in the system can be categorized as <ICM type PT> or <DN type PT>.

<ICM type PT> (default)
ICM button + CO buttons

All PTs in the system have one ICM button and one L-CO button by default.

<DN type PT>
DN button(s) + CO buttons

If at least one PDN button is assigned on a PT, it functions as a DN type PT. In this case, ICM button on a PT does not function.

Conditions

[General]

- **Ringing Tone Selection (DPT only)**
  A ringing tone type for CO (S-CO, G-CO, L-CO) and DN (PDN, SDN) buttons can be selected either by Station or System Programming.

[CO General]

- **CO Button Assignment (flexible CO)**
  A CO button (S-CO, G-CO, L-CO) can be assigned to a flexible CO button on a PT by Station, User or System Programming.
- **CO Button Assignment (flexible DSS)**
  A G-CO / S-CO button can also be assigned to a flexible DSS button on a DSS console. These buttons are available for monitoring the call activity only, not available for making or receiving a call.
- **Priority of CO Call Indication (ICM type PT)**
  It is possible to assign S-CO, G-CO and L-CO buttons on a PT. Incoming and outgoing calls on the line are shown on the button in the following priority: S-CO > G-CO> L-CO
- It is possible to assign one CO line to both an S-CO and a G-CO button on the same PT at a time.

[S-CO]

- **Busy / Idle Status**
  An S-CO button indicator provides busy / idle status of the CO line.
- The same CO line cannot be assigned to more than one S-CO button on a PT.
- **ARS Override**
  If Automatic Route Selection (ARS) is set, it is overridden by an outgoing call made by pressing the S-CO button.

[G-CO]

- The same Trunk Group can be assigned to more than one different G-CO button on the same PT.
- **ARS Override**
  If Automatic Route Selection (ARS) is set, it is overridden by an outgoing call made by pressing the G-CO button.

[L-CO]

- **Local Access / ARS**
  Pressing the L-CO button provides the same operation as dialing the feature number for "Local CO Line Access / ARS" (Default = 9). This results in "Trunk Access, Idle" or "Automatic Route Selection (ARS)" depending on System Programming.

[DN General]

- **DN Button Assignment (flexible CO)**
  A DN button (PDN, SDN) can be assigned to a flexible CO button on a PT by Station, User or System Programming.

  PDN: Up to three PDN buttons can be assigned per PT and at least one PDN button should always be assigned to the CO 01 button.

  SDN: Up to eight SDN buttons per PDN button can be assigned to eight different PTs respectively. Up to three different SDN buttons can be assigned per PT.
- **Priority of CO Call Indication (DN type PT)**
  Both CO and DN buttons can be assigned on one DN type PT at a time. In this case, an incoming CO call appears on a CO button if it has the associated CO line. If not, the incoming CO call appears on a PDN button.
- **Delayed Ringing**
  Immediate, delayed or no ringing can be assigned to the DN (PDN, SDN) buttons.

  PDN: Delayed ringing assignment of the first PDN button (assigned to the CO 01 button) applies to all other PDN buttons on the PT.

  SDN: If more than one SDN button is assigned on the PT, each SDN button can have its unique delayed ringing assignment respectively.
- **Ringing Transfer**
  An extension user can transfer a call on an SDN button to its associated PDN button simply by pressing the SDN button.
- **PDN Call**
  An SDN button can be used to call the extension which has the PDN button associated with the SDN button with a simple operation.

[PDN]

- If at least one PDN button is idle, the calls appear on the PDN button either when the extension is on-hook or off-hook (including when engaged in another call).

[SDN]

- **DN type PT only**
  An SDN button should be assigned to a DN type PT. An SDN button assigned to an ICM type PT does not function.
- **Associated PDN button**
  An SDN button should have its associated PDN button. Otherwise, it does not function.
- **SDN COS (Class of Service)**
  This setting is applied when the extension user makes an outside call using an SDN button on his own PT.

  a) Own Extension (Default)
  His own toll restriction level (determined by COS programming) is applied to the call.

  b) PDN
  Toll restriction level of the PDN owner is applied to the call.
- SDN buttons can be used to answer the following types of call which come in on its associated PDN: DIL 1:1; DISA; DID; DID (ISDN); MDN; UCD; Call hunting: IRNA; Extension; TIE

Programming Guide References

- 2.2 Tenant
  - Automatic Route Selection
- 2.4 Class of Service (COS)
  - Trunk Group Setting
  - SDN COS
- 2.6 Local Hunt Sequence
- 3.2 Trunk Group
- 4.3 Extension Line
  - CO Key
- 4.4 DSS Console
  - DSS Key

Features Guide References

1.6 Originating Features

- Automatic Route Selection (ARS)
- Inter Office Calling
- PDN Call
- Trunk Access

1.9 Answering Features

- Answering, Direct Trunk

1.11 Transferring Features

- Ringing Transfer

1.13 Audible Tone Features

- Ringing, Delayed
- Ringing Tone Selection

1.16 Button Features

- Button, Direct Station Selection (DSS)
- LED Indication

User Manual References

- 2.2.3 Flexible Button Assignment
- 2.2.13 Ringing Tone Selection for CO Buttons
- 2.2.14 Ringing Tone Selection for INTERCOM Button
- 3.2.5 [005] Flexible CO Button Assignment
- 4.2.1 Making Calls
- 4.2.2 Receiving Calls
- 4.3.5 Answering, Direct Trunk
- 4.3.54 Outward Dialing, Trunk Access

Buttons on Proprietary Telephones and DSS Consoles

Description

Proprietary Telephones and DSS Consoles are provided with the feature / line access buttons listed below. The functions of the listed buttons are also described.

Buttons on KX-T Proprietary Telephones:

Buttons	7020 / 7320	7030 / 7330 / 7335	7050	7055	7130	7220	7230	7235	7250	7420	7425	7431	7433	7436	7450
AUTO ANSWER / MUTE*1	✔	✔			✔	✔	✔	✔		✔	✔	✔	✔	✔	✔
AUTO DIAL / STORE*1	✔	✔	✔	✔*2	✔	✔	✔	✔	✔*2	✔	✔	✔	✔	✔	✔
CO*1*3	✔ (12)	✔ (12)	✔ (12)	✔ (3)	✔ (12)	✔ (24)	✔ (24)	✔ (12)	✔ (6)	✔ (12)	✔ (24)	✔ (12)	✔ (24)	✔ (24)	✔ (12)
CONF*1	✔	✔	✔*2	✔*2	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔
FLASH	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Function								✔ (10)						✔ (10)	
FWD / DND*1	✔	✔			✔	✔	✔	✔		✔	✔	✔	✔	✔	✔
HOLD	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
INTERCOM*1	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Jog Dial										✔	✔	✔	✔	✔	✔
MESSAGE*1	✔	✔	✔		✔	✔	✔	✔		✔	✔	✔	✔	✔	✔
MODE												✔			
MONITOR			✔*1	✔					✔						✔
PAUSE	✔	✔	✔	✔	✔		✔	✔		✔	✔	✔	✔	✔	✔
PF (Programmable Feature)	✔ (4)	✔ (4)	✔ (4)	✔ (3)	✔ (12)										
PROGRAM						✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
REDIAL	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
SAVE					✔										
SELECT												✔			

Buttons	7020 / 7320	7030 / 7330 / 7335	7050	7055	7130	7220	7230	7235	7250	7420	7425	7431	7433	7436	7450
SHIFT*1							✔	✔					✔	✔	
Soft							✔ (3)	✔ (3)					✔ (3)	✔ (3)	
SP-PHONE*1	✔	✔			✔	✔	✔	✔		✔	✔	✔	✔	✔	
TRANSFER	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
VOICE CALL / MUTE*1															✔
VOLUME						✔	✔	✔	✔						

Buttons on KX-T DSS Consoles:

Buttons	7040	7240	7440	7441
Answer*2				
DSS*1*3	✔(32)	✔(32)	✔(66)	✔(48)
PF (Programmable Feature)*2*3	✔(16)	✔(16)		
RELEASE*2				✔

✔ : The button is provided on the designated telephones / DSS Consoles.

(x) : Shows the number of buttons only when multiple buttons are provided.

*1 : The button is provided with an LED (Light Emitting Diode).

*2 : The button is provided without an LED.

*3 : The buttons which can be changed to function as a feature button are called flexible buttons.

The functions of the listed buttons on KX-T Proprietary Telephones are described below:

AUTO ANSWER / MUTE:
This dual function button is used for hands-free answer back and microphone mute during a conversation.

AUTO DIAL / STORE:
Used for System Speed Dialing and storing program changes.

CO (Central Office line):
Used to make or receive an outside call. This can be re-assigned to a different CO or to various feature buttons.

CONF (Conference):
Used to establish a 3-party/5-party conference call.

FLASH:
Used to disconnect the current call and get another line for making a call without hanging up (Flash). Sends a flash signal to the Central Office or host PBX to access their features (External Feature Access).

Function:
Used to perform the displayed function / operation.

FWD / DND (Call Forwarding / Do Not Disturb):
Used to set or cancel Call Forwarding / Do Not Disturb feature.

HOLD:
Used to place a call on hold.

INTERCOM:
Used to make or receive intercom calls.

Jog Dial:
Used to adjust the volume of the handset receiver, headset, ringer and speaker. It also adjusts the display contrast. Please refer to Section "1.1.5 Initial Setting for KX-T7400 Series" in the User Manual.
For KX-T7431, KX-T7433 and KX-T7436 users, it is also used to select data from the Call Directory and the System Feature Access Menu.

MESSAGE:
Used to send a message indication to another extension, and confirm and call back the message sender.

MODE:
Used to shift the display in order to access various features.
During the Station Speed Dialing Number / Name assignment, this button is used to enter the name assignment mode.

MONITOR:
Used for hands-free dialing operation.

PAUSE:
Used to insert a pause in a System Speed Dialing / Station Speed Dialing / One-Touch Dialing number. With an APT, this button can also be used as the PROGRAM button.

PF (Programmable Feature):
These flexible buttons can be programmed to be a One-Touch Dialing, FWD / DND, SAVE, Account, CONF (Conference), Answer or Release button as desired.

PROGRAM:
Used to enter / exit the Programming mode. With KX-T7220 and KX-T7250, this button can also be used as the PAUSE button.

REDIAL:
Used for Last Number Redial.

SAVE:
Used to store a dialed telephone number for Saved Number Redial.

SELECT:
Used to select the displayed function or to call the displayed phone number.

SHIFT:
Used to access the next level of Soft button function.

Soft:
Pressing a Soft button performs the function / operation appearing on the bottom line of the display.

SP-PHONE (Speakerphone):
Used for hands-free operation. Pressing the button causes the telephone to switch between handset and hands-free operation.

TRANSFER:
Used to transfer a call to another extension or external destination.

VOICE CALL / MUTE:
This dual function button is used for hands-free intercom monitor and microphone mute during a conversation.

VOLUME:
Used to adjust the volume of the telephone speaker, handset receiver, headset or ringer. This button can also be used to adjust the display contrast.
During Special Display Features operation, this button can also be used to change the display.

The functions of the listed buttons on KX-T DSS Consoles are described below:

ANSWER:
Used to answer an incoming call to the paired telephone.

DSS (Direct Station Selection):
Used to access other extensions. These buttons are provided with no default setting.
Each DSS button can be programmed to correspond to each different extension.
DSS buttons can also be programmed for the other function buttons.

PF (Programmable Feature):
These buttons are provided with no default setting and can be programmed to be a One-Touch Dialing, FWD/DND, SAVE, Account, CONF (Conference), Answer or Release button as desired.

RELEASE
Used to disconnect the line during or after a conversation or to complete a Call Transfer.

Conditions

- **LED Indication**
  Certain buttons are equipped with LED (Light Emitting Diode) indicators to show line or feature status.
- **CO Button Type**
  CO buttons can be classified as the following three types:
  Single-CO (S-CO) button / Group-CO (G-CO) button / Loop-CO (L-CO) button
- For the operation of each button, please refer to the User Manual.

Programming Guide References

- 4.3 Extension Line
  - CO Key

Features Guide References

1.16 Button Features

- Button, Flexible

User Manual References

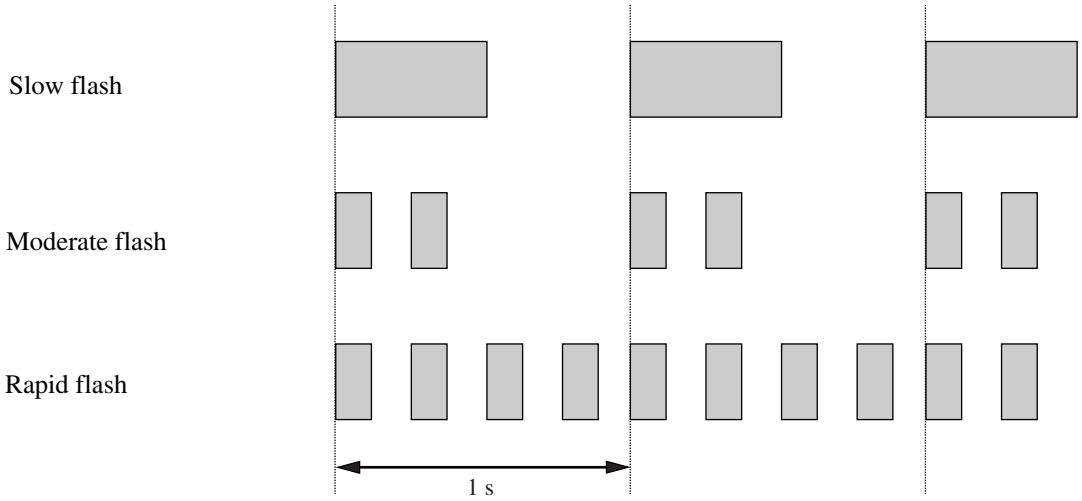
- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment

LED Indication

Description

The LED (Light Emitting Diode) indicators of the Line Access Buttons display the line conditions with the following lighting patterns: Off, Steady On, Slow flash, Moderate flash, Rapid flash. This allows the extension user to see the current status of the line.

Flashing light (winks) patterns



The following tables show the lighting pattern for each Line Access Button.

LED Indication and the line status — INTERCOM button

LED Indication	Line Status
Off	Idle
Green On	Intercom call / Conference established
Green slow flash	Intercom call hold
Green moderate flash	On exclusive hold / Consultation hold
Green rapid flash	An intercom call or a doorphone call is coming in.

LED Indication and the line status — S-CO button

LED Indication	Line Status
Off	Idle
Green On	You are using the line.
Green slow flash	You have a held call.
Green moderate flash	You have one of the following: **1.** Exclusive hold **2.** Consultation hold **3.** Conference, unattended
Green rapid flash	Hold Recall / Privacy Release possible / A CO call is coming in on a single extension.
Red On	Other in use / Other on exclusive hold
Red slow flash	Other on hold
Red moderate flash	————
Red rapid flash	A CO call is coming in on multiple extensions simultaneously.

LED Indication and the line status — G-CO button

LED Indication	Line Status
Off	Idle
Green On	You are using the line.
Green slow flash	You have a held call.
Green moderate flash	You have one of the following: **1.** Exclusive hold **2.** CO-to-CO line call **3.** Conference, unattended
Green rapid flash	Hold Recall / A CO call is coming in on a single extension.
Red On	All CO lines within the trunk group are in use.
Red slow flash	———
Red moderate flash	———
Red rapid flash	A CO call is coming in on multiple extensions simultaneously.

LED Indication and the line status — L-CO button

LED Indication	Line Status
Off	Idle
Green On	You are using the line.
Green slow flash	You have a held call.
Green moderate flash	You have one of the following: **1.** Exclusive hold **2.** CO-to-CO line call **3.** Conference, unattended
Green rapid flash	Hold Recall / A CO call is coming in on a single extension.
Red On	———
Red slow flash	———
Red moderate flash	———
Red rapid flash	A CO call is coming in on multiple extensions simultaneously.

LED Indication and the line status — PDN button

LED Indication	Line Status
Off	Idle
Green On	You are using the line.
Green slow flash	You have a held call.
Green moderate flash	You have one of the following: **1.** Exclusive hold **2.** Consultation hold **3.** Conference, unattended
Green rapid flash	A CO call is coming in on a single extension / Hold Recall / Automatic Callback Busy / Incoming doorphone call / Privacy Release possible*
Red On	SDN in use / SDN on exclusive hold
Red slow flash	SDN on hold
Red moderate flash	———
Red rapid flash	A CO call is coming in on multiple extensions simultaneously.

- Items marked with "⁎" are only available on the Single-CO button.

LED Indication and the line status — SDN button

LED Indication	Line Status
Off	Idle
Green On	You are using the line.
Green slow flash	You have a held call.
Green moderate flash	You have one of the following: **1.** Exclusive hold **2.** Consultation hold **3.** Conference, unattended
Green rapid flash	Hold Recall / Automatic Callback Busy / Privacy Release possible*
Red On	PDN in use / PDN on exclusive hold
Red slow flash	PDN on hold
Red moderate flash	———
Red rapid flash	A call is coming in.

- Items marked with "⁎" are only available on the Single-CO button.

Conditions

None

Programming Guide References

System Programming is not required.

Features Guide References

1.16 Button Features

- Button, Line Access

User Manual References

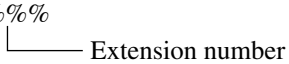
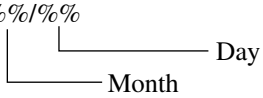
Not applicable.

1.17 Display Features

Absent Message Capability

Description

Once set, this option provides a message on the display of the calling extension, to show the reason for the called extension's absence. Up to nine absent messages, common to all extension users, can be programmed as desired.
There are six pre-programmed default absent messages.

Message No.	Message
1	Will Return Soon
2	Gone Home
3	At Ext %%%% 
4	Back at %%:%%
5	Out Until %%/%% 
6	In a Meeting
7-9	—

Note

- The "%" means a parameter to be entered when assigning a message at individual extension.

Conditions

- Absent Messages can be programmed either by User or System Programming.
- Setting or canceling an absent message can be done by any extension user but only callers with a display PT can receive the absent message.
- An extension user can select only one absent message at a time.
  A newly assigned absent message overwrites the previous one.
- The selected message is displayed every time the extension user (who set the message) goes off-hook.
- **Distinctive Dial Tone**
  When this feature is assigned to the extension, the extension user may hear a distinctive dial

tone (dial tone 2) after going off-hook depending on System Programming <Section 2.8 System Option, "15. Special dial tone after setting feature" in the Programming Guide>.

Programming Guide References

- 2.3 Numbering Plan
  - Absent Message Set / Cancel
- 2.8 System Option
  - Special dial tone after setting feature
- 5.8 Absent Message

Features Guide References

None

User Manual References

- 3.2.8 [008] Absent Messages Set
- 4.3.1 Absent Message Capability

Bilingual Display

Description

Provides the display PT user with either an English or French display. Either display can be selected by Station or System Programming.

Conditions

None

Programming Guide References

- 4.3 Extension Line
  - Language

Features Guide References

None

User Manual References

- 2.2.1 Bilingual Display Selection
- 6.1.1 Display Examples

Busy Lamp Field

Description

The LED (Light Emitting Diode) indicators of the DSS (Direct Station Selection) buttons, each of which corresponds to a selected extension, display whether the corresponding extensions are idle or busy.

Conditions

- **DSS Button Assignment**
  This function is available for DSS buttons on DSS Consoles and for flexible CO buttons assigned as DSS buttons on PTs.
- **Log-in / Log-out**
  DSS buttons reflect the Log-in / Log-out status of the extensions in the Extension Group / Incoming Group (UCD) as follows: Off - Log-in, Red slow flashing - Log-out.
- A DSS button indicator lights in red if the corresponding extension is busy.

Programming Guide References

- 3.3 Extension Group
  - [UCD Setting] LOGIN Monitor
- 3.5 Incoming Group
  - [UCD Setting] Supervisor Extension
- 4.3 Extension Line
  - CO Key
- 4.4 DSS Console
  - DSS Key

Features Guide References

1.15 Proprietary Telephone Features
- DSS Console

1.16 Button Features
- Button, Direct Station Selection (DSS)

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment

Call Directory

Description

Allows the KX-T7431, KX-T7433, KX-T7436 and KX-T7235 users to make a call using the following call directories which can easily be accessed by using the display.

Directory type	Description
Extension Dialing Directory	Provides a display of extension names. This is convenient to make an extension call just by name. The extension user can another extension simply by pressing the Function button associated with the name.
Station Speed Dialing Directory	A list of the names and telephone numbers stored in Station Speed Dialing is displayed. This allows the extension user to make a Station Speed Dialing call by knowing just the name.
System Speed Dialing Directory	A list of the names stored in System Speed Dialing is displayed. This allows the extension user to dial by name without having to know the telephone number. All the user needs to do is to press the Function button associated with the desired name.

Conditions

[Extension Dialing Directory]

- Extension name can be programmed either by User Programming <Section "3.2.4 [004] Extension Name Set" in the User Manual> or System Programming <Section 4.3 Extension Line, "Name" in the Programming Guide>.
- **Tenant Service**
  If Tenant Service is employed, only the extension names within the same tenant are displayed.

[Station Speed Dialing Directory]

- It is necessary to program Station Speed Dialing Numbers and Names into one of the 10 Function buttons (F1 through F10).
- **Initial Display Selection**
  Initial display of Station Speed Dialing Directory, "Number" or "Name," is determined by System Programming <Section 2.8 System Option, "10. Station Speed Dialing Initial Display" in the Programming Guide>. An extension user can change the setting by Station Programming <Section "2.2.17 Station Speed Dialing Number/Name Assignment [KX-T7235/KX-T7431/KX-T7433/KX-T7436 only]" in the User Manual>.

[System Speed Dialing Directory]

- System Speed Dialing numbers and names can be programmed either by User Programming <Section "3.2.2 [001] System Speed Dialing Number Set" and Section "3.2.3 [002] System Speed Dialing Name Set"> or System Programming <Section "5.2 System Speed Dialing" in the Programming Guide>.

- Both "Name" and "Number" should be stored in pairs for each System Speed Dialing No. Otherwise "Name" is not shown on a large display PT.
- **Tenant Service**
  If Tenant Service is employed, System Speed Dialing numbers and names being displayed is limited within the same tenant.

Programming Guide References

- 2.8 System Option
  - Station Speed Dialing Initial display
- 4.3 Extension Line
  - Name
- 4.7 ISDN Extension Line
  - Name
- 5.2 System Speed Dialing
  - Tenant No.
  - Name
  - Number

Features Guide References

1.7 Dialing Features

- One-Touch Dialing
- Station Speed Dialing
- System Speed Dialing

1.17 Display Features

- Special Display Features

User Manual References

- 2.2.17 Station Speed Dialing Number/Name Assignment [KX-T7235/KX-T7431/KX-T7433/KX-T7436 only]
- 3.2.2 [001] System Speed Dialing Number Set
- 3.2.3 [002] System Speed Dialing Name Set
- 3.2.4 [004] Extension Name Set
- 4.5.8 KX-T7235 Display Features - Call Directory
- 4.5.11 KX-T7431 / KX-T7433 / KX-T7436 Display Features - Call Directory

Call Forwarding / Do Not Disturb

Description

Allows the KX-T7436 and KX-T7235 users to set or cancel the Call Forwarding and Do Not Disturb (DND) features using the display messages after pressing the FWD / DND button.

Conditions

None

Programming Guide References

System Programming is not required.

Features Guide References

1.8 Ringing Features
- Do Not Disturb (DND)

1.11 Transferring Features
- Call Forwarding

User Manual References

- 4.5.2 Call Forwarding / Do Not Disturb (KX-T7436 / KX-T7235 only)

Call Log, Incoming

Description

This is one of the Caller ID service features available for the following DPT extensions only: KX-T7230, KX-T7235, KX-T7433, KX-T7436. When an incoming CO call with Caller ID information directed to an extension is not answered, Caller ID information is automatically recorded in the Call Log of the called extension. This information can be used for confirming the caller and callback purposes.

Automatic Recording

If an incoming CO call directed to a single extension was not answered, the caller's information is automatically recorded in the Call Log of the called extension just after the call ringing has stopped.

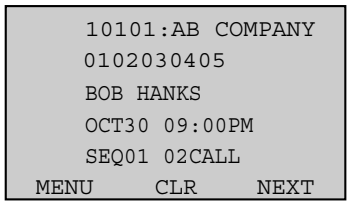
Manual Recording

The extension user can record the caller's information manually during or after the call until the next caller information is displayed.

Up to 30 Call Records can be logged in the Call Log either automatically or manually per display DPT extension.

[Display example]

Caller's information is displayed as follows:



— Trunk Port Physical Number, Name
— Caller ID Number
— Caller ID Name
— Date, Time
— Sequence Number (01-30)/ Number of Times Called (30 times max.)

Callback

The extension user can call back the outside caller by choosing the appropriate Call Records in the Call Log.

Conditions

- **Calls to multiple DPTs (DIL 1:N, Ring Group, Phantom extensions)**
  If a call rang at more than one extension simultaneously but was not answered, the caller's information is recorded in the Call Log of the DPT with the lowest extension port physical number. (Installing additional cards may change the order.)
- **Call Transfer**
  If the call transferred to another extension is not answered – and then the outside caller disconnects the line, Caller ID information is recorded in the Call Log of the extension to which the call was transferred.
- **Call Forwarding – All, Busy, No Answer**
  If the call forwarded to another extension is not answered – and then the outside caller disconnects the line, Caller ID information is recorded in the Call Log of the extension to which the call was forwarded. Regarding "Call Forwarding – No Answer," Caller ID information may be recorded in the Call Log of both call forwarding setting and destination extensions, if the call was not answered by both extensions.

- **Call Log Incoming, Overwrite Mode**
  If the Call Log is full (30 call records are already logged) when a new Caller ID call comes in, the extension user can choose one of the following two options.

  a) a new call record overwrites the oldest one in the Call Log

  b) a new call record is not logged
- **Call Log Incoming, Log Lock**
  The extension user can lock the call log display so that incoming call information is not shown on the display. The Manager or an Operator can cancel the "Call Log Incoming, Log Lock" in case the extension user forgets the lock code.
- **Callback Process**
  The system automatically modifies the incoming caller's number in a pre-programmed way for local or long distance calls.
- **<System Programming example>**
  Section "5.11 Caller ID Modification" (Please refer to Programming Guide)
  (1) [Local Call] Area Code: 201
  (2) [Local Call] Digits to delete: 3
  (3) [Local Call] Number to be added: blank
  (4) [Long Distance Call] Digits to delete: 0
  (5) [Long Distance Call] Number to be added: 1

	Caller's number provided by CO	Recorded caller's number
Local call	2011234567	1234567 (modified by steps [2] and [3])
Long distance call	7149876543	17149876543 (modified by steps [4] and [5])

Installation Manual References

- 2.5.5 ELCOT Card (KX-TD50180)
- 2.5.6 BRI Card (KX-TD50288)
- 2.5.7 PRI23 Card (KX-TD50290)
- 2.7.4 Caller ID Card (KX-TD193)

Programming Guide References

- 1.2 Slot Assignment
- 2.3 Numbering Plan
  - Call Log Incoming, Overwrite Mode
  - Call Log Incoming, Log Lock
- 2.8 System Option
  - Automatic adjustment of the clock using Caller ID information
- 4.2 Trunk Line
  - Name
- 4.3 Extension Line
  - Initial Display Selection
  - [Call Log Incoming] Overwrite Mode
  - [Call Log Incoming] Lock Password
- 5.11 Caller ID Modification
  - [Local Call] Area Code
  - [Local Call] Digits to delete
  - [Local Call] Number to be added
  - [Long Distance Call] Digits to delete
  - [Long Distance Call] Number to be added
- 5.12 Caller ID Registration
- 10.4 SMDR
  - Print out Caller ID Information

Features Guide References

1.5 Attended Features

- Caller ID Service

User Manual References

- 4.4.3 Call Log Incoming, Log Lock
- 4.4.9 Remote Station Lock Control
- 4.5.4 Call Log, Incoming (KX-T7436 / KX-T7433 / KX-T7235 / KX-T7230 only)
- 4.5.5 Call Log Incoming, Log Lock (KX-T7436 / KX-T7433 / KX-T7235 / KX-T7230 only)

Call Log, Outgoing

Description

Provides a KX-T7436 and KX-T7235 display of the last five outside telephone numbers (up to 24 digits for each) dialed at the extension. This allows the extension user to redial the number by pressing the Function button associated with the telephone number.
This is an extended version of "Last Number Redial."

Conditions

- If the Call Log is full when a new outside call is made, the oldest telephone number is overwritten by a new one.

Programming Guide References

System Programming is not required.

Features Guide References

1.7 Dialing Features
- Redial

User Manual References

- 4.5.6 Call Log, Outgoing (KX-T7436 / KX-T7235 only)

Display Contrast Adjustment

Description

Allows the display PT user to adjust the display contrast.

The adjusting method differs depending on the type of PT.

DPT

Soft buttons and Volume button are used to adjust the contrast to one of three levels.

APT

A sliding lever (CONTRAST selector) on the telephone is used to select one of three levels.

Conditions

None

Programming Guide References

System Programming is not required.

Features Guide References

None

User Manual References

- 1.1.5 Initial Setting for KX-T7400 Series
- 1.1.6 Initial Setting for KX-T7200 Series

Display, Call Information

Description

The display PT shows the extension user the following call information:

Extension number and name

These are shown when calling or called by an extension user and during an established intercom call.
A display example: **123: Tony Viola**

Dialed telephone number

This is shown when dialing the telephone number.
A display example: **1234567890**

Number or name of the caller

These are shown if the Caller ID feature is available.
Display examples:
10101: 1234567890
10101: Panasonic

CO Line number and name

This is shown when receiving a CO call.
A display example: **10101: AB COMPANY**

DID/DID(ISDN) number and name

These are shown when receiving a DID/DID(ISDN) call.
Display examples:
DID: Tony Viola (When "Name" is registered.)
10101: CO001 (When "Name" is not registered.)

Call duration of outside call

This is shown during an established CO call. The display remains for 5 seconds after the call is finished.
A display example: **10101 0 : 02'28**

Doorphone No.

This is shown when receiving or making a doorphone call.
A display example: **Doorphone 1**

Conditions

- Extension numbers and names are programmable. If no extension name is stored, only the extension number is displayed.
- Intercom Call Duration is not shown on the display.
- The outgoing CO call duration count starts when a specified time expires.
- **Caller ID Service**

  Depending on a type of the CO line, Caller ID Service can be classified as follows:

  1) Analog CO line - Caller ID Service

  2) ISDN CO line - CLIP (Calling Line Identification Presentation) Service

3) T1 CO line - Caller ID Service

Programming Guide References

- 2.5 System Timer
  - Call Duration Count Start Time
- 4.2 Trunk Line
  - Name
- 4.3 Extension Line
  - DN
  - Name
  - Initial Display Selection
- 5.12 Caller ID Registration
- 9.2 DID Dial Registration
  - Name

Features Guide References

1.5 Attended Features

- Caller ID Service

User Manual References

- 4.5.3 Call Information Display (KX-T7436 / KX-T7433 / KX-T7235 / KX-T7230 only)

Display, Date and Time

Description

Allows the display PT users to display the following "Date and Time Notation" while on-hook.

Display example: Day of the week, Month, Day, Time (AM / PM)

```
SAT JAN01 12:00A
```

Conditions

- The display PT users can alternate between "Date and Time" display and " Self-extension number" display by pressing "✳" while on-hook.
- The current date and time are set by User or System Programming.
- **Summer Time**
  The start and end dates of the summer time can be programmed by System Programming. The system clock will be adjusted (one hour forward or backward) at 2:00 a.m. of the programmed date, if enabled. It means 2:00 a.m. will become 3:00 a.m. on the start date of the summer time, and 2:00 a.m. will become 1:00 a.m. on the end date. If "Timed Reminder" or "Day / Night Switching Mode" feature is set between 1:00 a.m. and 3:00 a.m., it may not work properly.

Programming Guide References

- 2.8 System Option
  - LCD Time Display Mode
  - Date Display
- 10.7 System Time

Features Guide References

None

User Manual References

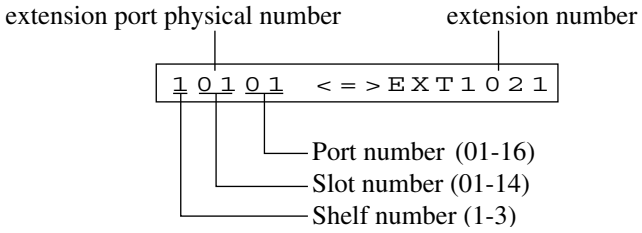
- 3.2.1 [000] Date and Time Set

Display, Self-Extension Number

Description

Allows the display PT user to display their own extension port physical number and extension number in Station Programming mode.

Display example:



Conditions

None

Programming Guide References

System Programming is not required.

Features Guide References

None

User Manual References

- 2.2.15 Self-Extension Number Confirmation

Message Waiting

Description

The system supports the ability to inform the called party of a message waiting. The called party, with a MESSAGE button, Another Extension Message Waiting button or Phantom Extension Message Waiting button knows there is a message if the MESSAGE button, Another Extension Message Waiting button or Phantom Extension Message Waiting button LED (Light Emitting Diode) lights red. Pressing the lit MESSAGE button, Another Extension Message Waiting button or Phantom Extension Message Waiting button, or dialing the Message Waiting feature number can call back the caller or listen to messages which are stored in a mailbox in the Voice Processing System.

Conditions

- **Turning off the light**
  Either the message sender or the receiver can turn off the light.
- **MESSAGE button (Owner Extension)**
  If a MESSAGE button is not provided on a PT, it can be assigned to a flexible (CO, DSS) button by Station, User or System Programming.
- **MESSAGE-OTHER button (Another Extension/Phantom Extension)**
  The Another Extension Message Waiting button or the Phantom Extension Message Waiting button can be assigned to a flexible CO button by User or System Programming and to a flexible DSS button by System Programming.
- **SLTs with message waiting lamp**
  Any extension user can turn on the message waiting lamp on an SLT in the same way as the PTs. SLTs with message waiting lamp should be connected to an ESLC (KX-TD50175) or SLC-M (KX-T96175) card.
  One of 12 message waiting lamp lighting patterns (for SLTs) can be selected by System Programming.
- **VPS Integration**
  If VPS Integration is employed, a VM extension informs an extension that a message is left in his mailbox by turning on the MESSAGE lamp. The extension user can listen to the message in the mailbox simply by pressing the red lit MESSAGE lamp.
- **Call Forwarding**
  A message waiting notification is left on the Call Forwarding setting extension regardless of a type of Call Forwarding features except for "To CO / TIE Line" and "No Answer to CO / TIE Line."
- **Station Hunting**
  A message waiting notification to an extension in the station hunting group is treated in the same manner as the ordinary call.
- A message can be canceled from the sending extension or from the receiving extension.
- Up to 448 message indications can be set in the system.

Programming Guide References

- 2.3 Numbering Plan
  - Message Waiting Set / Cancel / Call Back
- 2.8 System Option
  - Message Waiting lamp pattern
- 4.3 Extension Line
  - Message Lamp
  - CO Key
- 4.4 DSS Console
  - DSS Key
- 5.10 VPS Integration
  - Turn off control of Message Waiting lamp

Features Guide References

1.3 System Features

- Integration, Voice Mail (VM) Service

User Manual References

- 2.2.3 Flexible Button Assignment
- 3.2.5 [005] Flexible CO Button Assignment
- 4.3.46 Message Waiting
- 4.3.83 VPS Integration

Special Display Features

Description

With the display telephone, KX-T7431, KX-T7433, KX-T7436 or KX-T7235, the extension user can easily access several features. The display telephones have the ability to perform the following features.

Feature	KX-T7431	KX-T7433	KX-T7436	KX-T7235
Call Directory	✔	✔	✔	✔
Extension Dialing	✔	✔	✔	✔
Station Speed Dialing	✔	✔	✔	✔
System Speed Dialing	✔	✔	✔	✔
Call Forwarding / Do Not Disturb	✔			✔
Call Log, Outgoing	✔			✔
System Feature Access Menu	✔	✔	✔	✔

"✔" indicates the feature is available.

Conditions

None

Programming Guide References

System Programming is not required.

Features Guide References

1.11 Transferring Features
- Call Forwarding

1.17 Display Features
- Call Directory
- Call Forwarding / Do Not Disturb
- Call Log, Outgoing
- System Feature Access Menu

User Manual References

- 4.5 Special Display Features

System Feature Access Menu

Description

This feature provides a display of the system features available at any time and allows the extension user to have access to the desired features.

- The features available are:

Absent Message Capability	Electronic Station Lockout
Automatic Callback Busy (Camp-On)	Executive Busy Override Deny
Call Forwarding (set / cancel)	External Modem Control
Call Forwarding – All Calls to an Incoming Group (set / cancel)	Group Log-In / Log-Out
Call Log, Incoming	Live Call Screening (LCS) Password Clear
Call Log Incoming, Log Lock	Log-In / Log-Out
Call Park	Message Waiting
Call Pickup, access / deny	Paging, access / answer / deny
Call Waiting	Paralleled Telephone (set / cancel)
Data Line Security	Pickup Dialing (Hot Line)
Day / Night Switching Mode	Station Program Clear
Do Not Disturb (set / cancel)	Timed Reminder (Wake-Up Call)
Door Opener	Walking COS
Doorphone Call	

- In addition to the features above, the Manager and the Operators can execute the following features.

Background Music (BGM) – External	Timed Reminder, Remote (Wake-Up Call)
Outgoing Message (OGM), Record / Playback	Trunk Busy-out Setting
Remote DND (Do Not Disturb) Control	Trunk Route Control
Remote FWD (Call Forwarding) Cancel-Once	UCD Monitor Mode
Switching COS	

Conditions

None

Programming Guide References

System Programming is not required.

Features Guide References

None

User Manual References

- 4.5.9 KX-T7235 Display Features - System Feature Access Menu
- 4.5.12 KX-T7431 / KX-T7433 / KX-T7436 Display Features - System Feature Access Menu

Section 2

ISDN Features

2.1 ISDN Features

Integrated Services Digital Network (ISDN)

Description

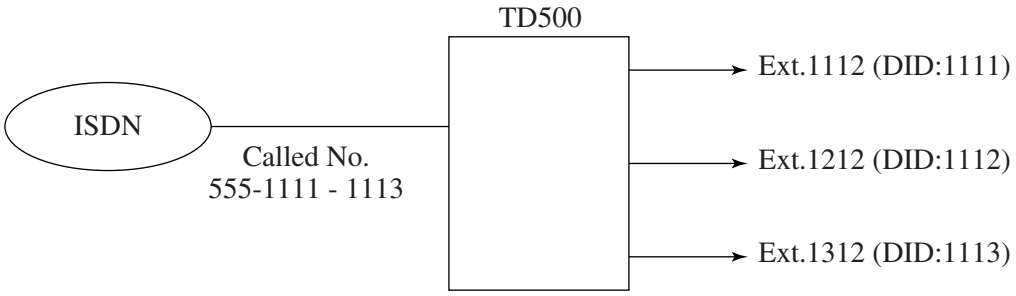
Integrated Services Digital Network (ISDN) is a hierarchy of digital switching and transmission systems. ISDN transmits voice, data, and image in digital format. It is synchronized so all digital elements speak the same language at the same speed.

[ISDN Interface]
ISDN provides the following two interfaces:
•Basic Rate Interface (BRI)
BRI provides 2 B channels (64 kbps for each) for data transmission and 1 D channel (16 kbps) for signaling (2B + D).
•Primary Rate Interface (PRI)
PRI provides 23 B channels (64 kbps for each) for data transmission and 1 D channel (64 kbps) for signaling (23B + D).

[System Hardware Requirements]
To interface the KX-TD500 System with ISDN, one of the following two trunk cards is required depending on the ISDN interface type.
•KX-TD50288 (BRI Card) for Basic Rate Interface
•KX-TD50290 (PRI23 Card) for Primary Rate Interface

[Access Mode]
The KX-TD500 System can handle calls from ISDN with Point-to-Point (P-P) or Point-to-MultiPoint (P-MP) access mode or both. The PRI23 Card (KX-TD50290) is available for P-P access mode only.
Point-to-Point (P-P) access mode
A call from ISDN with DID (Direct Inward Dialing) number is directed to a specific regular extension (with DN) or virtual extension (with FDN) directly after translation of the DID (ISDN) number.

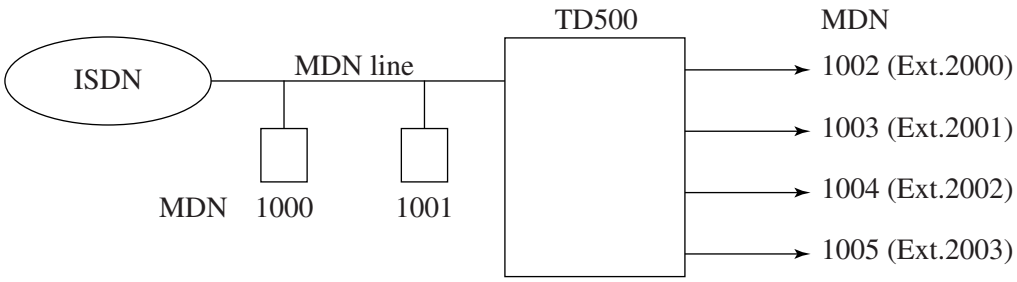
DID (Direct Inward Dialing) (ISDN) Configuration



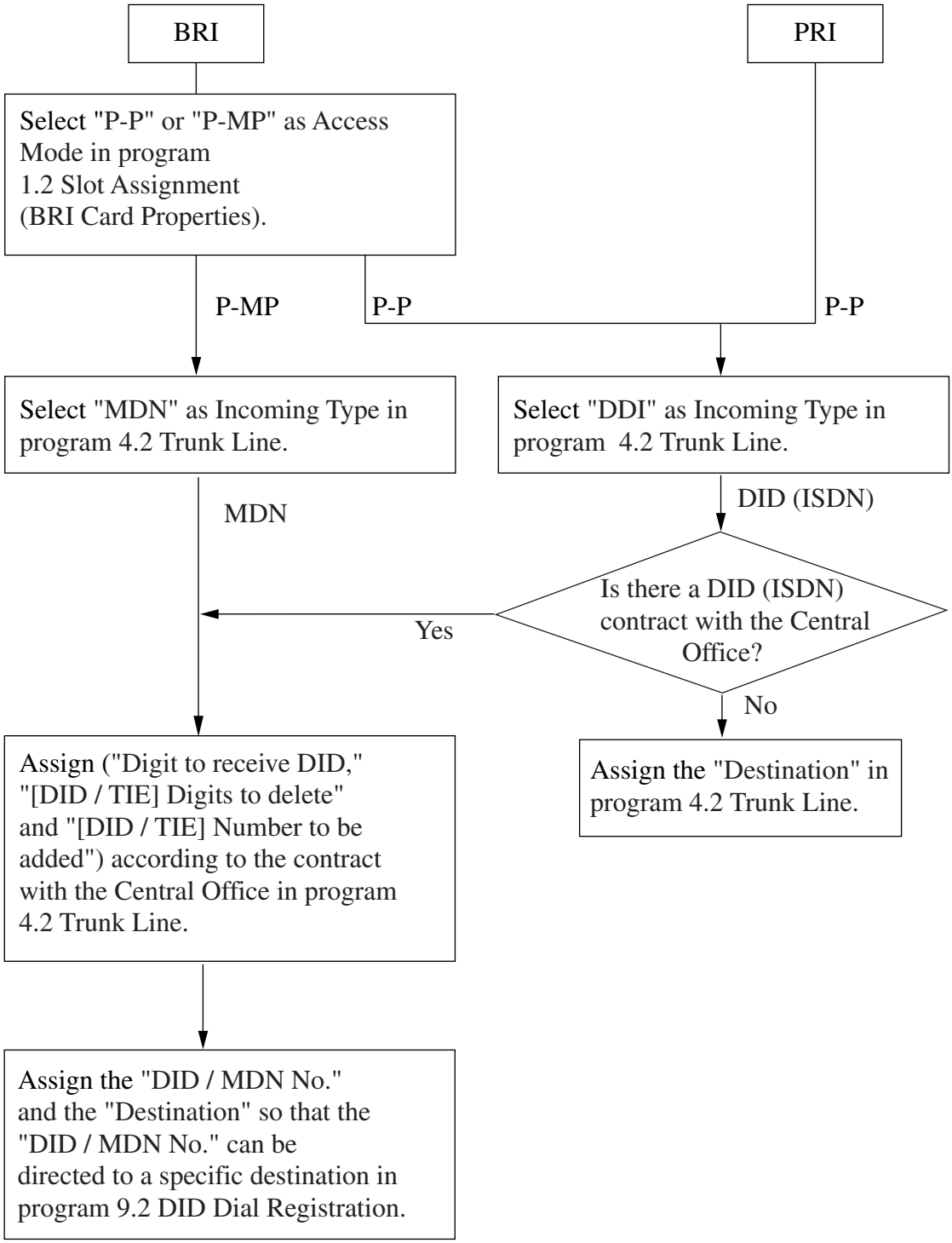
Point-to-MultiPoint (P-MP) access mode
If Multiple Directory Number (MDN) service is contracted with the Central Office, up to eight extensions or terminals or both can be connected to one ISDN BRI line. A different DN is assigned to each extension or terminal. A call from ISDN is directed to a specific regular

extension (with DN) or virtual extension (with FDN) directly after translation of the MDN number.

MDN (Multiple Directory Number) Configuration



Flow chart of required programs for ISDN


BRI
PRI
Select "P-P" or "P-MP" as Access Mode in program 1.2 Slot Assignment (BRI Card Properties).
P-MP
P-P
P-P
Select "MDN" as Incoming Type in program 4.2 Trunk Line.
Select "DDI" as Incoming Type in program 4.2 Trunk Line.
MDN
DID (ISDN)
Is there a DID (ISDN) contract with the Central Office?
Yes
No
Assign ("Digit to receive DID," "[DID / TIE] Digits to delete" and "[DID / TIE] Number to be added") according to the contract with the Central Office in program 4.2 Trunk Line.
Assign the "Destination" in program 4.2 Trunk Line.
Assign the "DID / MDN No." and the "Destination" so that the "DID / MDN No." can be directed to a specific destination in program 9.2 DID Dial Registration.

Conditions

None

Installation Manual References

- 2.5.6 BRI Card (KX-TD50288)
- 2.5.7 PRI23 Card (KX-TD50290)

Programming Guide References

- 1.2 Slot Assignment
- 1.8 BRI Port Assignment
- 1.9 PRI Port Assignment
- 4.2 Trunk Line
  - Incoming Type
  - Destination—Day/Night/Lunch/Break
  - [DID/TIE] Digits to delete
  - [DID/TIE] Number to be added
  - Digit to receive DID
- 9.2 DID Dial Registration
  - DID/MDN No.

Features Guide References

2.3 ISDN Attended Features

- Direct Inward Dialing (DID)
- Multiple Directory Number (MDN) Ringing Service

User Manual References

Not applicable.

Integrated Services Digital Network (ISDN) Extension

Description

The KX-TD500 System supports the connection of Terminal Equipment with separate power supplies. For example, ISDN telephones, G4 Facsimiles and Personal Computers which are connected to an ISDN S0 bus on a BRI (Basic Rate Interface) card (KX-TD50288)/a PRI23 (Primary Rate Interface) card (KX-TD50290).
A maximum of eight Terminal Equipment can be connected to each ISDN S0 bus with Point-to-Multipoint configuration. However, only up to two Terminal Equipment on the same S0 bus can be used simultaneously. Each Terminal Equipment can be addressed individually with Multiple Directory Number (MDN). The MDN consists of the ISDN extension number and an additional digit, 0 through 9.
If MDN is not assigned, all equipment on the same S0 bus are called simultaneously.

The following bearer capabilities can be supported:

Transfer Mode	Transfer Capability
Circuit	Unrestricted digital
Circuit	Speech
Circuit	3.1 KHz Audio

The functions of Terminal Equipment are similar to Single Line Telephone functions except for the following features:

- Absent Message
- Alternate Calling – Ring / Voice
- Automatic Callback Busy
- Call Forwarding
- Call Hold
- Call Hold Retrieve
- Call Log Incoming, Log Lock
- Call Park
- Call Pickup
- Call Transfer
- Call Waiting
- Caller ID
- Conference (three-party, five-party)
- Data Line Security
- DIL 1:N Service
- Do Not Disturb (DND)
- Do Not Disturb (DND) Override
- Extension Group / Incoming Group Service (Hunting, Operator, Ring, UCD)
- External Feature Access (EFA)
- Extra Device Port
- Log-In / Log-Out
- Manager Extension
- Message Waiting
- Paging – Group Answer
- Phantom Extension
- Paralleled Telephone
- Pickup Dialing
- Released Link Operation
- Remote Station Lock
- Timed Reminder
- Trunk Answer From Any Station (TAFAS)
- Voice Mail Service
- Walking COS

- Doorphone
- Executive Busy Override
- Walking Station

Conditions

- COS (Class of Service) for ISDN extension port applies to all Terminal Equipment on the same S0 bus (BRI card).

Installation Manual References

- 2.5.6 BRI Card (KX-TD50288)
- 2.5.7 PRI23 Card (KX-TD50290)

Programming Guide References

- 1.2 Slot Assignment
- 1.8 BRI Port Assignment
  - Type
  - DN
  - Group No.
- 1.9 PRI Port Assignment
  - Type
  - DN
  - Group No.
- 4.7 ISDN Extension Line
  - [CLIP Number] Public
  - [CLIP Number] Private
  - [COS No.] Primary
  - [COS No.] Secondary

Features Guide References

None

User Manual References

Not applicable.

2.2 ISDN Originating Features

Calling Line Identification Presentation (CLIP)

Description

Calling Line Identification Presentation (CLIP) enables the calling party's number to be shown on the display of the called party's telephone when a call is received.
This is one of the ISDN supplementary services.

To use the CLIP service, number assignments are required as follows:

- CLIP number for each outside line
- CLIP number for each extension

Conditions

- **CLIP Numbers for ISDN PRI Lines**
  When an extension user makes an outside call using an ISDN PRI line, one of the following numbers (depending on the extension user's choice) is displayed on the telephone of the other party as the CLIP number.
  a) CLIP number assigned to the trunk line
  The number stored in "Subscriber" <Section 4.2 Trunk Line in the Programming Guide>.
  b) CLIP number assigned to the extension line
  The number stored in "[CLIP Number] Public" <Section 4.3 Extension Line in the Programming Guide>.
- **CLIP Numbers for ISDN BRI Lines**
  When an extension user makes an outside call using an ISDN BRI line, the number stored in "DN" <Section 1.2.9 Card Properties (BRI) – SPID/DN in the Programming Guide> is displayed on the telephone of the other party as the CLIP number.
- The CLIP service for outgoing CO calls can be restricted by dialing the feature number for "CLIR" (Calling Line Identification Restriction).
- The number actually sent to the calling or called party may be different from the system programming number. It depends on the contract with your ISDN service provider.
- **ISDN Public Switched Telephone Network**
  This feature applies to the calls over the ISDN Public Switched Telephone Network.
- **Hardware Requirements**
  To utilize this feature, a BRI card (KX-TD50288) or a PRI23 card (KX-TD50290) is required.

Installation Manual References

- 2.5.6 BRI Card (KX-TD50288)
- 2.5.7 PRI23 Card (KX-TD50290)

Programming Guide References

- 1.2 Slot Assignment
- 1.8 BRI Port Assignment
- 1.9 PRI Port Assignment
- 2.3 Numbering Plan
  - CLIP
- 4.2 Trunk Line
  - Subscriber
- 4.3 Extension Line
  - [CLIP Number] Public
- 4.7 ISDN Extension Line
  - [CLIP Number] Public

Features Guide References

2.2 ISDN Originating Features

- Calling Line Identification Restriction (CLIR)

User Manual References

- 4.3.19 Calling Line Identification Presentation (CLIP)

Calling Line Identification Restriction (CLIR)

Description

Allows the extension user to restrict the presentation of the calling party's number to the called party when making a call. This is one of the ISDN supplementary services.

Conditions

- **Calling Line Identification Presentation (CLIP)**
  If CLIP service is enabled, the called party can find out who is calling before deciding to answer the call.
- **ISDN Public Switched Telephone Network**
  This feature applies to the calls over the ISDN Public Switched Telephone Network.
- **Hardware Requirements**
  To utilize this feature, a BRI card (KX-TD50288) or a PRI23 card (KX-TD50290) is required.

Installation Manual References

- 2.5.6 BRI Card (KX-TD50288)
- 2.5.7 PRI23 Card (KX-TD50290)

Programming Guide References

- 1.2 Slot Assignment
- 1.8 BRI Port Assignment
- 1.8 BRI Port Assignment
  - Type
  - Group No.
- 1.9 PRI Port Assignment
  - Type
  - Group No.
- 2.3 Numbering Plan
  - CLIR / CNIR
- 4.2 Trunk Line
  - Subscriber
- 4.3 Extension Line
  - [CLIP Number] Public
- 4.7 ISDN Extension Line
  - [CLIP Number] Public

Features Guide References

2.2 ISDN Originating Features

- Calling Line Identification Presentation (CLIP)

User Manual References

- 4.3.20 Calling Line Identification Restriction (CLIR) / Calling Name Identification Restriction (CNIR)

Calling Name Identification Presentation (CNIP)

Description

Calling Name Identification Presentation (CNIP) enables the calling party's name to be shown on the display of the called party's telephone when a call is received.
This is one of the ISDN supplementary services.

Conditions

- The CNIP service for outgoing CO calls can be restricted by dialing the feature number for "CNIR" (Calling Name Identification Restriction).
- **ISDN Public Switched Telephone Network**
  This feature applies to the calls over the ISDN Public Switched Telephone Network.
- **Hardware Requirements**
  To utilize this feature, a PRI23 card (KX-TD50290) is required.
- It is programmable whether or not to use the CNIP (ISDN) service when an outside call is made using an ISDN PRI line by System Programming <Section 2.8 System Option, "CNIP Service" in the Programming Guide>.
- The name for CNIP Service cannot be programmed. It is informed from ISDN telephone company.

Installation Manual References

- 2.5.7 PRI23 Card (KX-TD50290)

Programming Guide References

- 1.2 Slot Assignment
- 1.9 PRI Port Assignment
- 2.8 System Option
  - CNIP Service

Features Guide References

2.2 ISDN Originating Features
- Calling Name Identification Restriction (CNIR)

User Manual References

Not applicable.

Calling Name Identification Restriction (CNIR)

Description

Allows the extension user to restrict the presentation of the calling party's name to the called party when making a call. This is one of the ISDN supplementary services.

Conditions

- If the presentation is enabled, the called party can check the calling party's name before the called party answers it (Calling Name Identification Presentation, CNIP).
- **ISDN Public Switched Telephone Network**
  This feature applies to the calls over the ISDN Public Switched Telephone Network.
- **Hardware Requirements**
  To utilize this feature, a PRI23 card (KX-TD50290) is required.

Installation Manual References

- 2.5.7 PRI23 Card (KX-TD50290)

Programming Guide References

- 2.3 Numbering Plan
  - CLIR / CNIR

Features Guide References

2.2 ISDN Originating Features

- Calling Name Identification Presentation (CNIP)

User Manual References

- 4.3.20 Calling Line Identification Restriction (CLIR) / Calling Name Identification Restriction (CNIR)

2.3 ISDN Attended Features

Direct Inward Dialing (DID)

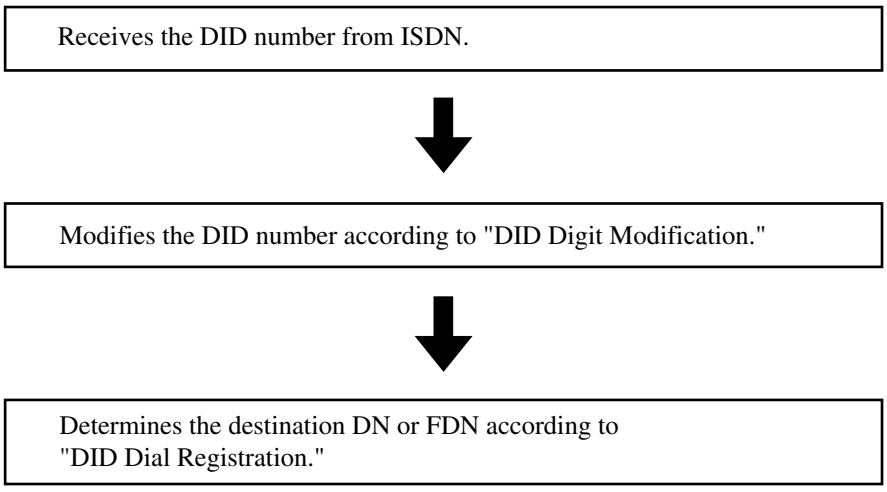
Description

Provides automatic direction of an incoming call from ISDN to a specific extension.
To realize this service, the DID number informed from ISDN telephone company is required.
The DID number is converted to a DN or FDN of the destination using a pre-programmed conversion table.
This is an ISDN version of DID (Direct Inward Dialing) service.

Assignable destinations are:

1. Regular extension with DN
2. Virtual extension with FDN
   - – Extension Group
   - – External Pager (TAFAS)
   - – Incoming Group
   - – Modem (Remote Administration)
   - – OGM Group (DISA message)
   - – Phantom Extension
3. Other PBX extension

Call Flow


Receives the DID number from ISDN.
Modifies the DID number according to "DID Digit Modification."
Determines the destination DN or FDN according to "DID Dial Registration."

Digits Modification Procedures

The System modifies the DID number according to the following three parameters.

1. **Digit to receive DID**
   The number of digits effective in the received DID number.
2. **Digits to delete**
   The number of digits to be deleted from the beginning of the digits processed in Step 1.
3. **Number to be added**
   The dials to be inserted at the beginning of the digits processed in Step 2.

[Example]
Digit to receive DID: 4 (digits)
Digits to delete: 1 (digit)
Number to be added: 2

The System modifies the received DID number "4311" into "2311" as follows:

Processed in Step 2: 4311→311
The first digit "4" was deleted. This results in "311."

Processed in Step 3: 311→2311
The digit "2" was added to the beginning of "311." This results in "2311."

DID Dial Registration

The System converts the modified number into the destination DN or FDN according to this table.

[Example] The System searches for the number "2311" in the table. When matching is found, the call rings the corresponding extension or floating station.

DID / MDN No. (Max. 16 digits)	Destination (Day)	Destination (Night)	Name (Max. 10 characters)
2311	2000	3000	PANASONIC

Conditions

- **What if the dialing digits received is not enough to decide the call destination?**
  If the number of digits received is less than the number which is programmed in "Digit to receive DID," reorder tone is sent to the caller, or the call is redirected to the IRNA destination (IRNA feature). This is determined by System Programming.
- **What if the call destination is busy?**
  If the destination of a DID call is in busy status, the caller may hear a busy tone or the call is redirected to the IRNA destination or the call waits until the destination becomes idle. This is determined by System Programming <Section 2.8 System Option, "18. Destination Busy - DID" in the Programming Guide>.
- **Hardware Requirements**
  To utilize this feature, a BRI card (KX-TD50288) or a PRI23 card (KX-TD50290) is required.
- The tenant number and VPS trunk group number can be assigned in the DID table so that the system is shared with tenants on a DID No. basis. It is programmable whether to enable

or disable the tenant assigned on a DID No. basis by System Programming <Section 2.8 System Option, "VM Trunk Service for DID " in the Programming Guide>.

- Tenant number is used to determine the time mode (day/night) for the corresponding DID number. VPS trunk group number is used in DPT Integration.

Installation Manual References

- 2.5.6 BRI Card (KX-TD50288)
- 2.5.7 PRI23 Card (KX-TD50290)

Programming Guide References

- 1.8 BRI Port Assignment
- 1.9 PRI Port Assignment
- 2.8 System Option
  - Destination Busy - DID
  - Illegal Number - DID
  - VM Trunk Service for DID
- 3.2 Trunk Group
  - Intercept Destination – Day / Night
- 4.2 Trunk Line
  - Incoming Type
  - Destination—Day/Night/Lunch/Break
  - [DID/TIE] Digits to delete
  - [DID/TIE] Number to be added
  - Digit to receive DID
- 4.3 Extension Line
  - Intercept Destination — Day / Night
- 9.2 DID Dial Registration
  - DID/MDN No.
  - Tenant No.
  - VPS Trunk Group No.

Features Guide References

2.1 ISDN Features

- Integrated Services Digital Network (ISDN)

User Manual References

Not applicable.

Multiple Directory Number (MDN) Ringing Service

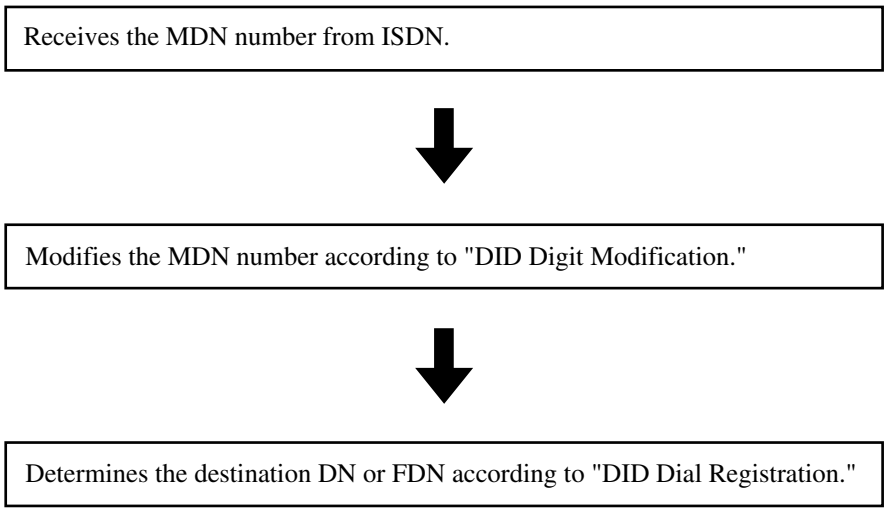
Description

Provides automatic direction of an incoming call from ISDN to a specific extension.
To realize this service, the MDN number informed from ISDN telephone company is required.
The MDN number is converted to a DN or FDN of the destination by using a pre-programmed conversion table.

Assignable destinations are:

1. Regular extension with DN
2. Virtual extension with FDN
   - Extension Group
   - Incoming Group
   - External Pager (TAFAS)
   - Modem (Remote Administration)
   - OGM Group (DISA message)
   - Phantom Extension

Call Flow


Receives the MDN number from ISDN.
Modifies the MDN number according to "DID Digit Modification."
Determines the destination DN or FDN according to "DID Dial Registration."

Digits Modification Procedures

The System modifies the MDN number according to the following three parameters.

1. **Digit to receive DID**
   The number of digits effective in the received MDN number.
2. **Digits to delete**
   The number of digits to be deleted from the beginning of the digits processed in Step 1.

3. Number to be added

The dials to be inserted at the beginning of the digits processed in Step 2.

[Example]

Digit to receive DID: 4 (digits)
Digits to delete: 1 (digit)
Number to be added: 2

The System modifies the received MDN number "4311" into "2311" as follows:

Processed in Step 2: 4311 → 311
The first digit 4 was deleted. This results in "311."

Processed in Step 3: 311 → 2311
The digit 2 was added to the beginning of "311." This results in "2311."

DID Dial Registration

The System converts the modified number into the destination DN or FDN according to this table.

[Example]

The System searches for the number "2311" in the table. When matching is found, the call rings the corresponding extension or floating station.

DID / MDN No. (Max. 16 digits)	Destination (Day)	Destination (Night)	Name (Max. 10 characters)
2311	2000	3000	PANASONIC

Conditions

- This service is available for ISDN BRI line only.
- **What if the dialing digits received is not enough to decide the call destination?**
  If the number of digits received is less than the number which is programmed in "Digit to receive DID," reorder tone is sent to the caller, or the call is redirected to the IRNA destination (IRNA feature). This is determined by System Programming.
- **What if the call destination is busy?**
  If the destination of an MDN call is in busy status, the caller may hear a busy tone, or the call is redirected to the IRNA destination or the call waits until the destination becomes idle. This is determined by System Programming.

Installation Manual References

- 2.5.6 BRI Card (KX-TD50288)

Programming Guide References

- 1.8 BRI Port Assignment
- 2.8 System Option
  - Destination Busy - DID
  - Illegal Number - DID
- 3.2 Trunk Group
  - Intercept Destination – Day / Night
- 4.2 Trunk Line
  - Incoming Type
  - [DID/TIE] Digits to delete
  - [DID/TIE] Number to be added
  - Digit to receive DID
- 4.3 Extension Line
  - Intercept Destination — Day / Night
- 9.2 DID Dial Registration
  - DID/MDN No.

Features Guide References

2.1 ISDN Features

- Integrated Services Digital Network (ISDN)

User Manual References

Not applicable.

Section 3

TIE Line Features

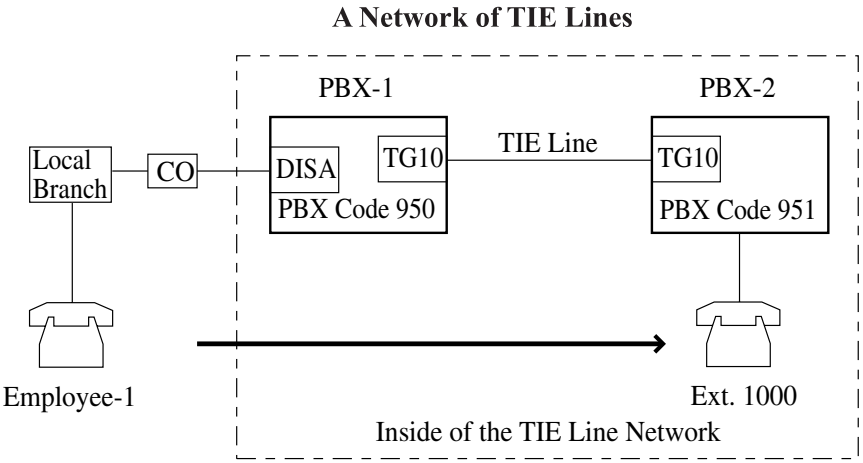
3.1 TIE Line Features

Outside (CO) Line and TIE Line Connection

Description

TIE lines are usually used to link two or more distant locations where high volume calling traffic exists. However, a person at a location outside of the TIE Line Network can also use it by first making a CO call via public network to the nearest point of TIE Line Network for the purpose of saving the toll call charge.

1. When a caller makes a CO call via DISA line



Call Flow

1. Employee-1 at a local branch makes a CO call to PBX-1 via DISA line.
2. Employee-1 dials "77" (TIE Line Access Code).
3. Employee-1 dials 951-1000.
4. Employee-1 at a local branch will be connected to Ext.1000 of PBX-2.

Programming example:
To make up the TIE Line Network above, the following System Programming is required at PBX-1 and -2 respectively.

PBX-1

- 2.7 Trunk to Trunk Restriction
- 8.2 TIE Routing Table
  - – PBX Code: 950

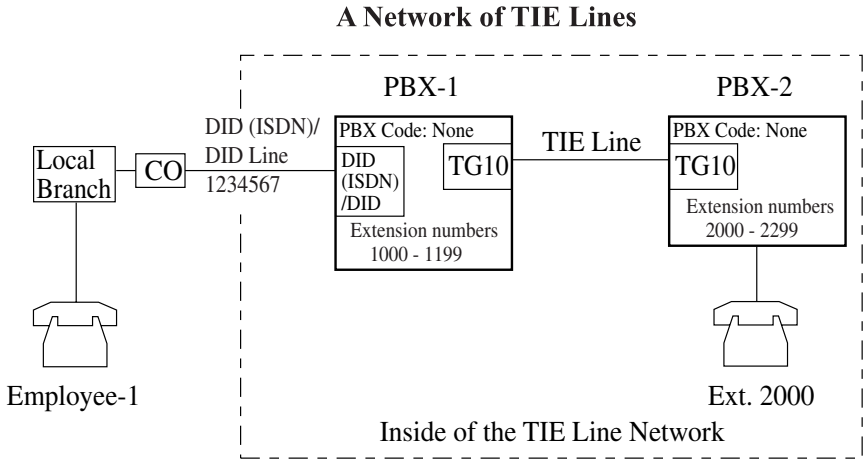
No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01 02 :	951	0		10				

PBX-2

- 2.7 Trunk to Trunk Restriction
- 8.2 TIE Routing Table
  – PBX Code: 951

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01 02 :	950	0		10				

2. When a caller makes a CO call according to "DID Dial Registration"



Call Flow

1. Employee-1 at a local branch makes a CO call to PBX-1 via DID (ISDN) or DID line.
2. PBX-1 converts the DID (ISDN) / DID number "1234567" into the destination DN or FDN "2000" according to DID Dial Registration table.
3. Employee-1 at a local branch will be connected to Ext.2000 of PBX-2.

Programming example:
To make up the TIE Line Network above, the following System Programming is required at PBX-1 and -2 respectively.

PBX-1

- 2.3 Numbering Plan
  - (01) 1st Hundred Block Extension: 10
  - (77) Other PBX 01: 2
- 8.2 TIE Routing Table

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01	2XX	0		10				

- 9.2 DID Dial Registration

DID / MDN No. (Max. 16 digits)	Destination (Day)	Destination (Night)	Name (Max. 10 characters)
1234567	2000	2000	

PBX–2

- 2.3 Numbering Plan
  - (01) 1st Hundred Block Extension: 20
  - (77) Other PBX 01: 1
- 8.2 TIE Routing Table

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01	1XX	0		10				

Conditions

- **Trunk to Trunk Restriction**
  Used to allow or restrict trunk-to-trunk path connection. To permit the TIE caller to make a CO call via the TD500 System, the Trunk Group used for this purpose should be allowed to relay the call by System Programming.

Programming Guide References

- 2.3 Numbering Plan
- 2.7 Trunk to Trunk Restriction
- 4.2 Trunk Line
  - [DID/TIE] Digits to delete
  - [DID/TIE] Number to be added
- 8.2 TIE Routing Table
  - PBX Code
- 9.2 DID Dial Registration

Features Guide References

1.11 Transferring Features

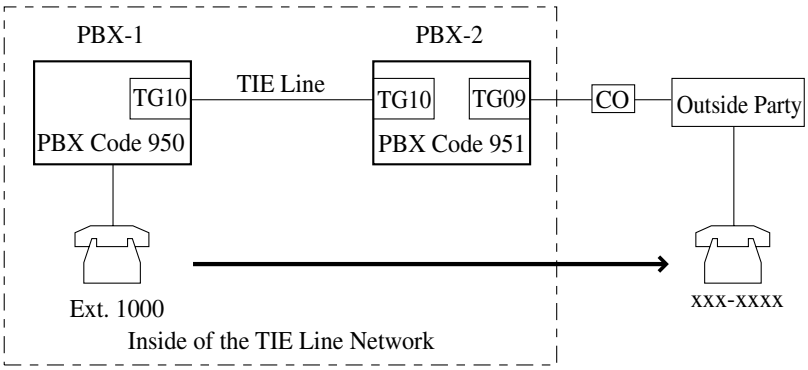
- Call Forwarding
- Call Transfer

TIE Line and Outside (CO) Line Connection

Description

TIE Lines can be used to minimize the cost of calls to a distant location outside of the TIE Line Network. A long distance call from one location may be a local call from another location. This fact should be considered before making a long distance call. If the destination of the long distance call is outside of the TIE Line Network, extension users first make a call to a distant PBX via TIE Line and then can make a local CO call to the final destination through that PBX.

A Network of TIE Lines



Call Flow

1. Ext.1000 dials 77-951-9 or 801 through 848 (TIE Line Access Code + PBX Code + CO Access Code).
2. Ext.1000 may be required to enter a "DISA / TIE User Code" depending on System Programming.*1
3. Ext.1000 hears a dial tone from an idle CO line of PBX-2.
4. Ext.1000 dials xxx-xxxx (phone number of the outside party).

Programming example:
To make up the TIE Line Network above, the following System Programming is required at PBX-1 and -2 respectively.

PBX-1

- 8.2 TIE Routing Table
  – PBX Code: 950

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01 02	951	0		10				

*1 Step 2 is required when "TIE-to-CO Security Mode" is set to "Yes" at PBX-2.

PBX-2

- 2.7 Trunk to Trunk Restriction
- 4.2 Trunk Line
  - [TIE Line] TIE-to-CO Security Mode
- 8.2 TIE Routing Table
  - PBX Code: 951

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01 02 :	950	0		10				

Conditions

- **Trunk to Trunk Restriction**
  Used to allow or restrict trunk-to-trunk path connection. To permit the TIE caller to make a CO call via TD500 System, the Trunk Group used for this purpose should be allowed to relay the call by System Programming.
- **DISA / TIE User Code**
  Used to allow certain extension users "TIE Line and Outside(CO) Line Connection." If "TIE-to-CO Security Mode" of the Trunk Line is set to "Yes," an extension user must enter a valid DISA / TIE User Code before making "TIE Line and Outside(CO) Line Connection."
- Making "TIE Line and Outside(CO) Line Connection" is available only when your system employs PBX Code (Location number) method for making / receiving TIE calls.

Programming Guide References

- 2.7 Trunk to Trunk Restriction
- 4.2 Trunk Line
  - [DID/TIE] Digits to delete
  - [DID/TIE] Number to be added
  - [TIE Line] TIE-to-CO Security Mode
- 5.9 DISA/TIE User Code
- 8.2 TIE Routing Table
  - PBX Code

Features Guide References

1.11 Transferring Features

- Call Forwarding
- Call Transfer

TIE Line and TIE Line Connection

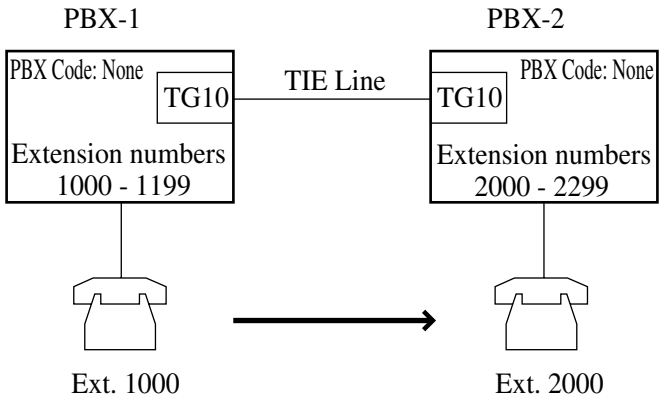
Description

TIE calls among several different company locations can be done by dialing a 3 or 4-digit extension number only, or by dialing a location number (PBX Code) and an extension number.

1. Extension Number only

1. Extension users can make a call via TIE line to other extension users in other PBXs within a private network simply by dialing a 3 or 4-digit extension number.

A Network of TIE Lines



Call Flow

1. Ext.1000 dials 2000.
2. Ext.1000 is connected to Ext.2000 of PBX-2.

Programming example:
To make up the TIE Line Network above, the following System Programming is required at PBX-1 and -2 respectively.

PBX–1

- 2.3 Numbering Plan
  - (01) 1st Hundred Block Extension: 10
  - (77) Other PBX 01: 2
- 8.2 TIE Routing Table

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01	2XX	0		10				

PBX–2

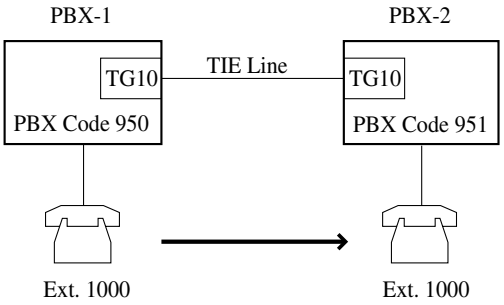
- 2.3 Numbering Plan
  - (01) 1st Hundred Block Extension: 20
  - (77) Other PBX 01: 1
- 8.2 TIE Routing Table

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01	1XX	0		10				

2. Location Number (PBX code) and Extension Number

1. Extension users can make a call to other extension users in other PBXs within a TIE Line Network by dialing a location number (PBX Code) and an extension number. Each PBX in the same TIE Line Network can have its unique flexible extension numbering plan.

A Network of TIE Lines



Call Flow

1. Ext.1000 of PBX-1 dials 77-951-1000.

2. Ext.1000 of PBX-1 is connected to Ext.1000 of PBX-2.

Programming example:
To make up the TIE Line Network above, the following System Programming is required at PBX-1 and -2 respectively.

PBX-1

- 2.3 Numbering Plan
  - (76) TIE Line Access: 77
- 8.2 TIE Routing Table
  - PBX Code: 950

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01 02 :	951	0		10				

PBX-2

- 2.3 Numbering Plan
  - (76) TIE Line Access: 77
- 8.2 TIE Routing Table
  - PBX Code: 951

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01 02 :	950	0		10				

Conditions

None

Programming Guide References

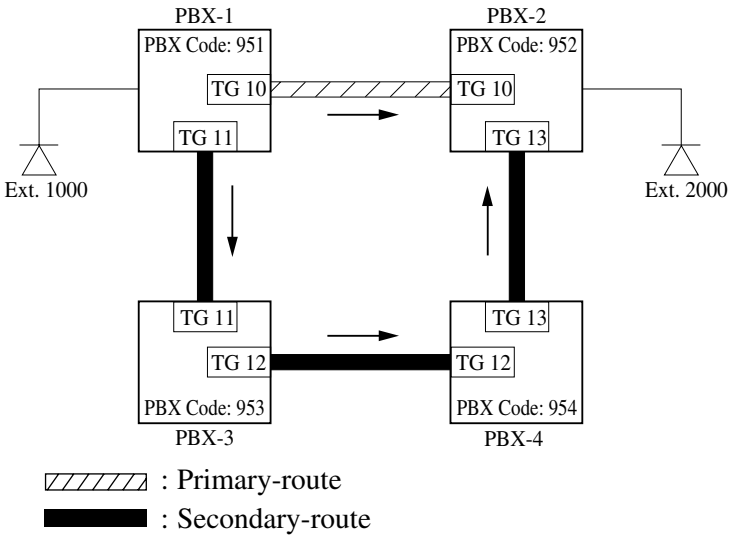
- 2.3 Numbering Plan
  - TIE Line Access
- 2.7 Trunk to Trunk Restriction
- 4.2 Trunk Line
  - [DID/TIE] Digits to delete
  - [DID/TIE] Number to be added
- 8.2 TIE Routing Table
  - PBX Code
  - Leading Digit
  - Digits to delete
  - Number to be added
  - Trunk Group No.
- 9.2 DID Dial Registration
  - DID/MDN No.

TIE Line Network – Alternate Routing

Description

When more than two PBXs at different locations are interconnected with a network of TIE Lines, your KX-TD500 works as an intermediate switching office to other PBXs in the network by relaying TIE calls from one PBX to another. A problem of telephone switching is that blocking sometimes occurs on the network, and a call cannot be switched as required because all the lines on a given route are occupied or unavailable. By utilizing this relay function, several alternative routes can be set up beforehand in addition to the primary-route. This permits TIE calls to be routed from "A to B" or "A through C to B" and so on. If the primary-route is poor because of equipment failure or congestion, KX-TD500 bypasses it and selects the secondary-route. On reception of a TIE call, KX-TD500 analyzes it to determine the destination to which the call must be sent or the route by which the calls will be sent, and then transmit it. Alternate Routing makes a TIE Line network more flexible in adapting to peaks of traffic and it provides a variety of different routing plans.

A Network of TIE Lines



Call Flow

1. Ext.1000 dials "77+952+2000."
2. When "952" is found in the table, TG10 (Hunt Sequence 01 for "952") is selected automatically.
   - If TG10 is not available, TG11 (Hunt Sequence 02) will be selected. In this case, the call is sent to PBX-2 via PBX-3 and -4. The treatment of the call is decided by Routing Table of PBX-3 and then PBX-4.
3. The call is sent to PBX-2.

Programming example:
To realize the call flow mentioned above, the following System Programming is required at PBX-1, -3, and -4 respectively.

PBX-1

- 8.2 TIE Routing Table
  – PBX Code: 951

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01 02 :	952	0		10	11			

- 2.7 Trunk to Trunk Restriction

PBX-3

- 8.2 TIE Routing Table
  – PBX Code: 953

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01 02 :	952	0		12				

- 2.7 Trunk to Trunk Restriction

PBX-4

- 8.2 TIE Routing Table
  – PBX Code: 954

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01 02 :	952	0		13				

- 2.7 Trunk to Trunk Restriction

Note

- If you want to restrict "call relay from PBX-1 to PBX-2 via PBX-3," set TG11 to "Yes" at PBX-3 using Trunk to Trunk Restriction Programming.

Conditions

None

Programming Guide References

- 2.7 Trunk to Trunk Restriction
- 4.2 Trunk Line
  - [DID/TIE] Digits to delete
  - [DID/TIE] Number to be added
- 8.2 TIE Routing Table
  - PBX Code

Features Guide References

None

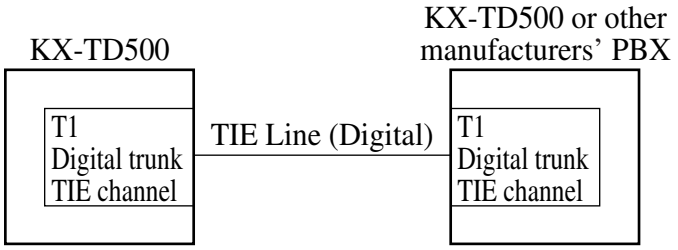
TIE Line Service

Description

A TIE line is a privately leased communication line between two or more PBXs, which provides effective communications between company members at different locations.
TIE lines can be used to call through KX-TD500 to reach another switching system (PBX or CO). By utilizing the TIE lines, the KX-TD500 can support not only communications with the public network but with other locations of the company in the private network of which your KX-TD500 can be a part.
To make a call to a person at a distant company location, an extension user must first obtain the appropriate TIE line to that person's PBX, and then dial the extension number only or a location number plus extension number.

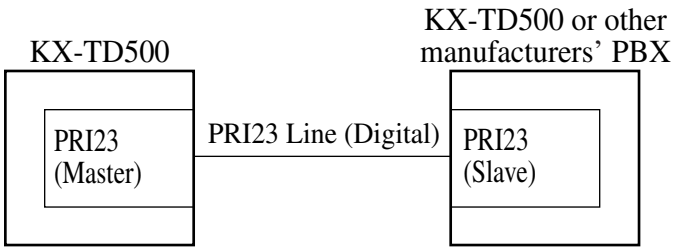
A Network of TIE Lines

1. Interfaced by a TIE channel of T1 (Digital)



Hardware Requirement: T1 Digital Trunk card (KX-T96187)

2. Interfaced by a PRI23 card (Digital)—Qsig



Hardware Requirement: PRI23 card (KX-TD50290)

Numbering Plan:

Extension users can make a call over the TIE Line Network to other extension users in a distant location by one of the following two ways: (Please refer to "TIE Line and TIE Line Connection.")

a) Extension Number only

Extension Number

b) Location Number (PBX Code) + Extension Number

TIE Line Access Code + PBX Code + Extension Number

or

CO (TIE) button

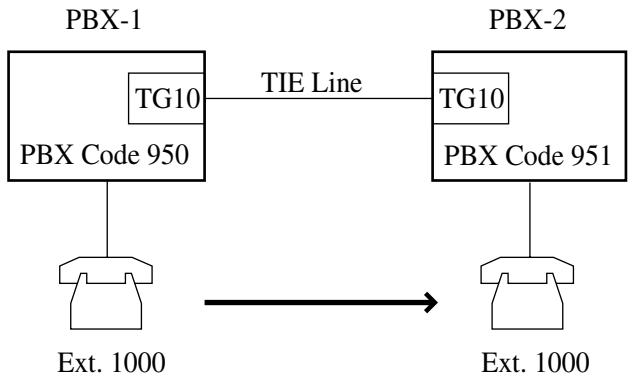
Routing Procedure 1: TIE Routing Table

Provides for the routing of calls over the TIE Line Network. Up to 36 routing patterns can be programmed in this table. This table is referenced by the system to identify the trunk route, when an extension user made a TIE call by dialing the feature number for "TIE Line Access" or "Other PBX 01-16." A routing pattern appropriate for each call is decided by the first 3 digits (except TIE Line Access code) of the dialed number.

- Routing Table Override
  If a TIE call is made by pressing a CO button, this table is not referenced by the system and the call is routed over the specified TIE line directly.

(Programming Example)

A Network of TIE Lines



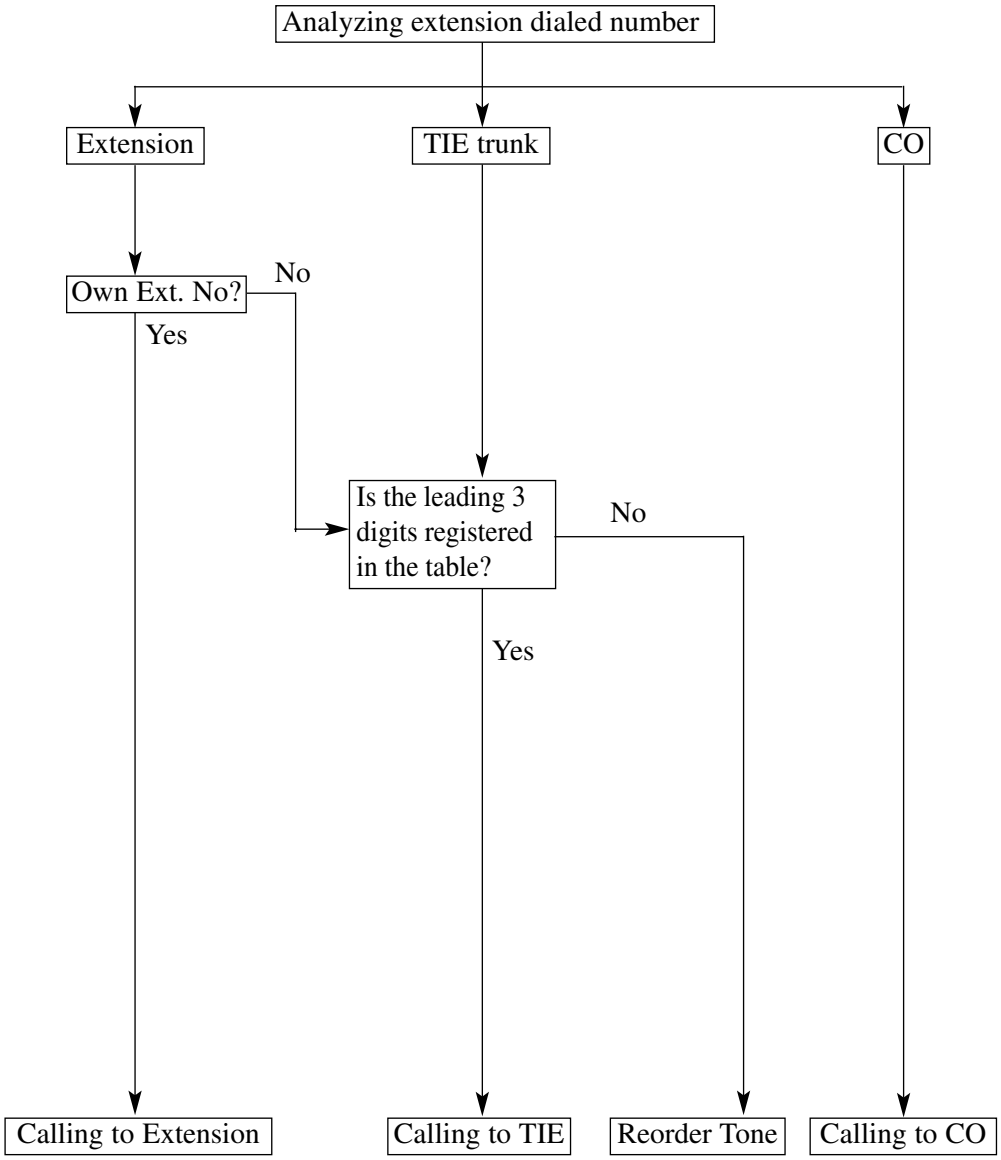
TIE Routing Table

No.	Leading Digit	Digits to delete	Number to be added	Trunk Group No.				
				01	02	03	04	05
01	951	0		10				
02								
:								

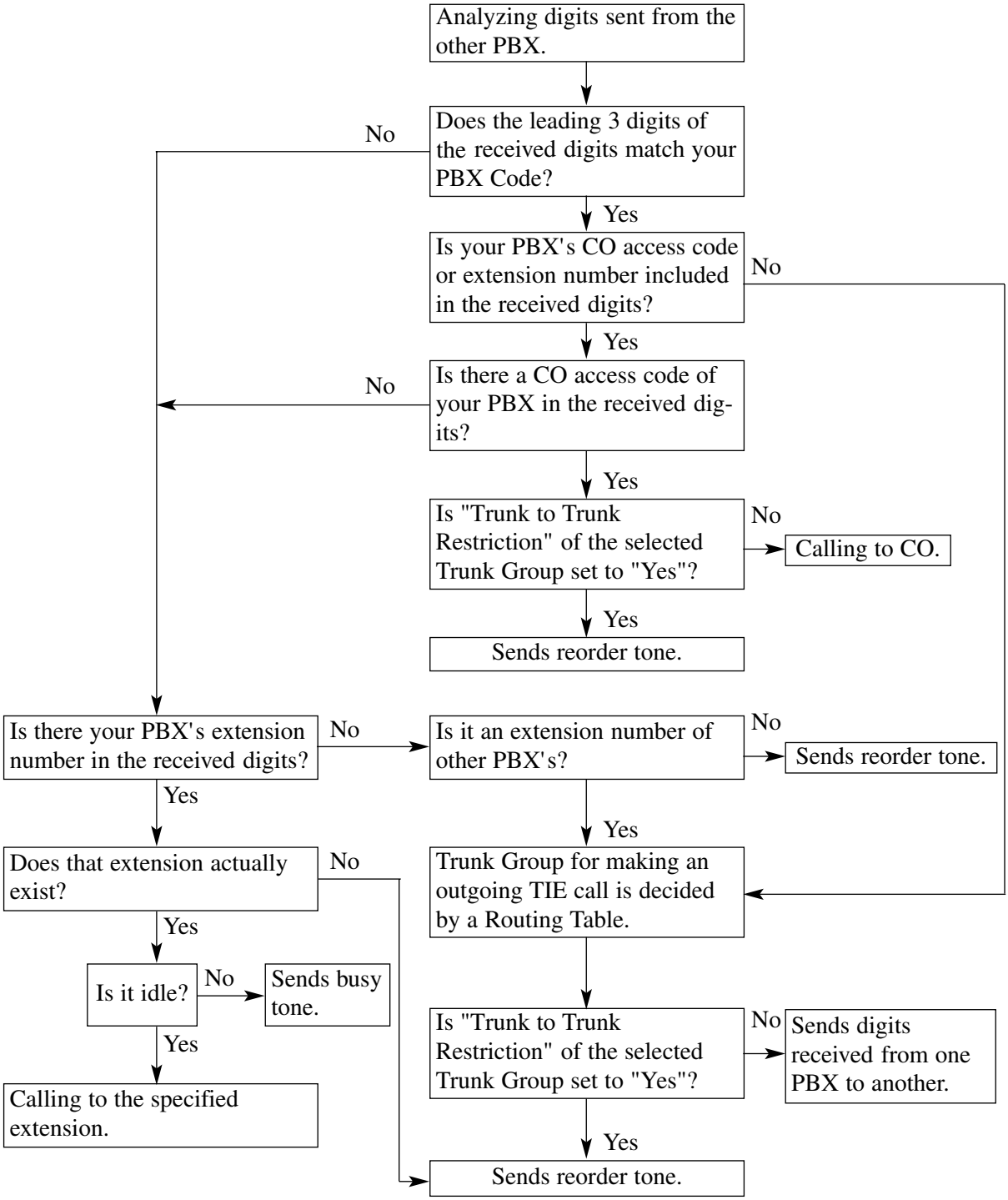
When "(TIE Line Access Code) + 951 + 1000" is dialed by an extension user, the routing pattern for this call is decided by "951." Then the call is routed over TG10.

Routing Procedure 2: Routing Flow Chart (1)

When a call is made by an extension user in your PBX



Routing Procedure 3: Routing Flow Chart (2)


Analyzing digits sent from the other PBX.
Does the leading 3 digits of the received digits match your PBX Code?
No
Yes
Is your PBX's CO access code or extension number included in the received digits?
No
Yes
Is there a CO access code of your PBX in the received digits?
No
Yes
Is "Trunk to Trunk Restriction" of the selected Trunk Group set to "Yes"?
No
Calling to CO.
Yes
Sends reorder tone.
Is there your PBX's extension number in the received digits?
No
Is it an extension number of other PBX's?
No
Sends reorder tone.
Yes
Yes
Does that extension actually exist?
No
Trunk Group for making an outgoing TIE call is decided by a Routing Table.
Yes
Is it idle?
No
Sends busy tone.
Yes
Is "Trunk to Trunk Restriction" of the selected Trunk Group set to "Yes"?
No
Sends digits received from one PBX to another.
Calling to the specified extension.
Yes
Sends reorder tone.

Conditions

- **Basic Programming**
  The Programming items listed in the following "Programming Guide References" are always required to make use of TIE lines.
- **Application Programming**
  Programming items required vary depending on a type of applications. Please refer to the following features in this section for further information about each application programming.
  – Outside (CO) Line and TIE Line Connection
  – TIE Line and Outside (CO) Line Connection
  – TIE Line and TIE Line Connection
  – TIE Line Network – Alternate Routing

Installation Manual References

- 2.5.4 T1 Digital Trunk Card (KX-T96187)
- 2.5.7 PRI23 Card (KX-TD50290)

Programming Guide References

- 1.2 Slot Assignment
- 1.6 T1 Port Assignment
  - Channel Type
  - Group No.
- 1.9 PRI Port Assignment
  - Type
  - Group No.
- 2.3 Numbering Plan
  - TIE Line Access
  - Other PBX 01 - Other PBX 16
- 2.5 System Timer
  - TIE Inter-digit Time
- 4.2 Trunk Line
  - Group No.
  - Incoming Type
  - [DID/TIE] Digits to delete
  - [DID/TIE] Number to be added
  - Start Signal Type
- 4.3 Extension Line
  - [CLIP Number] Public
  - [CLIP Number] Private
- 4.7 ISDN Extension Line
  - [CLIP Number] Public
  - [CLIP Number] Private

Features Guide References

1.11 Transferring Features

- Call Transfer

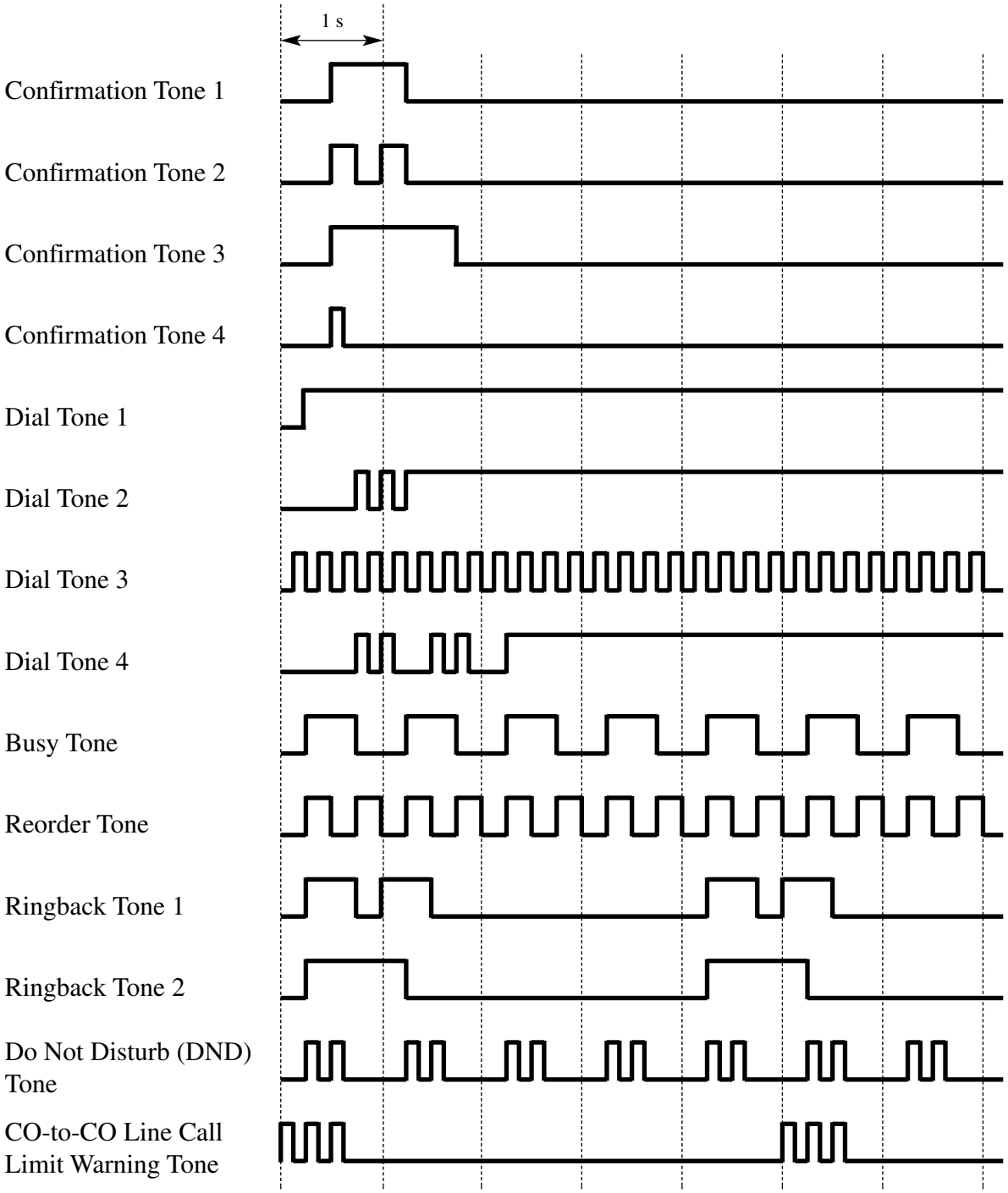
User Manual References

Not applicable.

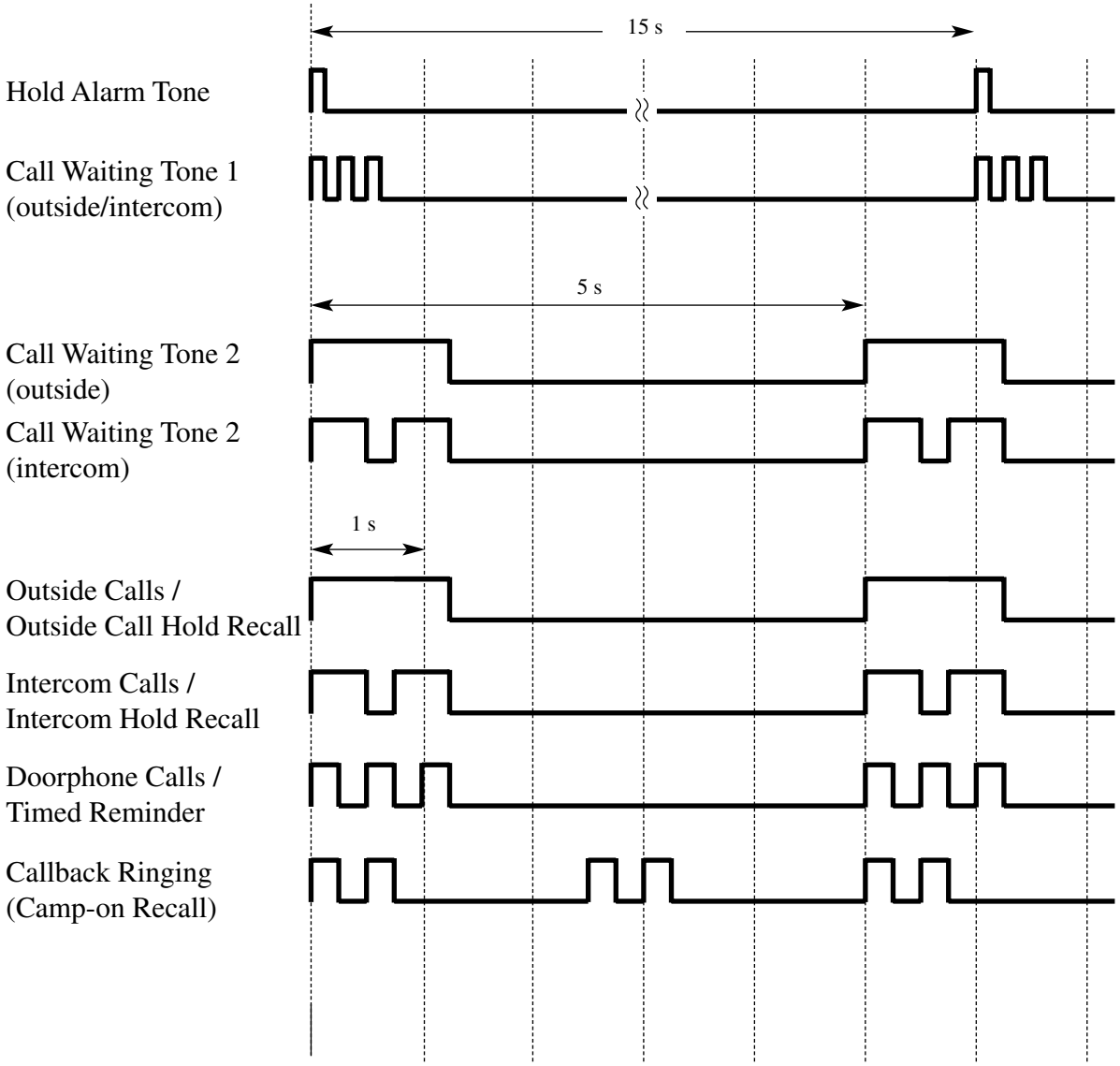
Section 4

Tones/Ring Tones

Tone Patterns



Tone Patterns



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